BULLETIN

No. 40

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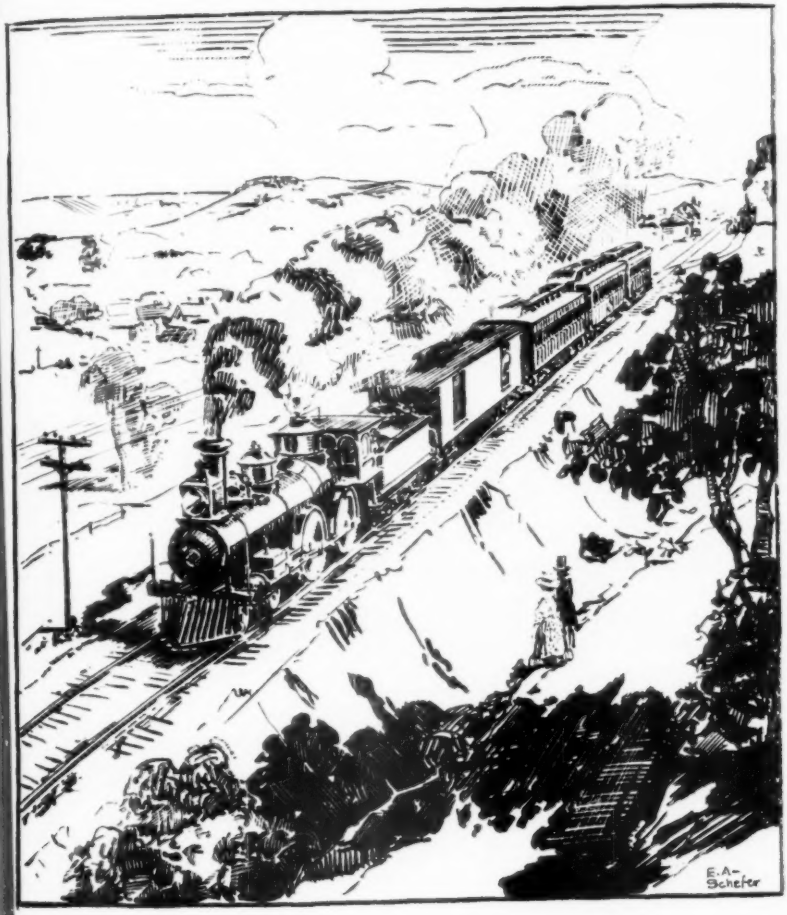

THE RAILWAY AND LOCOMOTIVE HISTORICAL SOCIETY

BULLETIN No. 40

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Table of Contents

The Pennoyer Prints ---------- 5
Recollections of George Westinghouse ---------- 5
Cover Design ---------- 6
New York Chapter Officers ---------- 6
Canadian Railway Centenary ---------- 6
George Westinghouse ---------- 7
History and Motive Power of the New York, Ontario & Western ---------- 16
Chicago's Old Depots ---------- 33
The Tonawanda Valley Lines ---------- 36
Canadian Celebration ---------- 44
New York Public Library ---------- 44
Samuel T. Lyke ---------- 45
Introductory ---------- 45
Railroads and the Confederacy ---------- 46
Outline of Express History ---------- 52
Locomotives of the New Haven Railroad ---------- 62
New York and New Haven Railroad Station ---------- 72
Regulations for N. Y. & N. H. R. R. Timetable No. 7 ---------- 74
Railroading in New York City ---------- 76
R. & L. H. S. Negatives ---------- 77
Worth Reading ---------- 78

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Again we are forwarding our members another one of our publications containing, what we hope, is of much value and interest. We are glad to welcome to our columns, papers which have been read before our New York and Chicago Chapters. Both contain much in the nature of historic material. The growth of the New York, Ontario & Western R. R. and the Tonawanda Valley Lines have added no little to the small amount of history of both of these roads. The brief account of the depots in Chicago may serve as a stimulus to some of our Chicago members to make further searches for material on this subject.

Your Editor wishes to express his appreciation to the seventy odd members who took the time and trouble to write him their opinions in the matter of the continuance of locomotive rosters. Since the majority expressed their opinion of their continuance, the locomotives of the New York, New Haven & Hartford R. R. are commencing in this bulletin. On the other hand, it must be clearly understood that while the value of these rosters is appreciated for the information they contain, only a certain amount of space in these publications can be granted for this purpose. A long array of locomotive numbers, construction numbers and dates, at best, is dry reading, aside from the time taken in the construction of these rosters. Only such roads whose series of numbers were so constructed that the subsidiary roads can be kept separate and thus indexed ought be considered for publication. To some, this may appear unwise but surely we cannot overlook the interests of our other members and the value of such interesting contributions as we have published in the past.

For the benefit of our members, copies of our Annual Report and our Membership Roster have already been forwarded to you. BULLETIN No. 39, so ably treated by our Canadian Representative, Mr. Robert R. Brown, on the Champlain & St. Lawrence R. R., the first railroad in Canada, was ready for distribution in March. This was a special bulletin and mailed to only those who subscribed for it. The cover design, depicting the start of the little "Dorchester", was sketched by our clever artist—Mr. O. Kuhler.

The Pennoyer Prints

We are again calling the attention of our members to this handsome set of colored prints of early American locomotives, from the brush of our member and talented artist—A. Sheldon Pennoyer. The set includes "Snowbound"—a Crampton type of locomotive used on the Camden & Amboy R. R. in the fifties; the "Pioneer" of the Cumberland Valley, built by Seth Wilmarth of Boston, in 1851; "An American Express Train" drawn by a Rogers locomotive of the seventies; and, through the kindness of the Delaware & Hudson R. R., we are able to include the "Stourbridge Lion," imported from Engiand by that road in 1829. The size of the "Pioneer" is 7x11"—the other three are 8¼x10½". This size does not include the broad white margins. The price is $5.00 per set of four prints and orders should be addressed to Chas. E. Fisher, 6 Orkney Road, Brookline, Mass.

Recollections of George Westinghouse

Personal information with regard to George Westinghouse, inventor of the Air Brake, is being collected by a committee of the American Society of Mechanical Engineers to be kept as an historical record; it will be available for use in connection with the 90th Anniversary of his birth which occurs this year. Those who knew Westinghouse are requested to contribute. Anecdotes and reminiscences are most interesting and usually reveal more phases of his unique and dominating personality. It is likely that young men who were in the testing and operating departments of railroads in the pioneer days of the Air Brake may have met him and received vivid impressions which it will now be a pleasure to record.

Mr. Roy V. Wright, Editor of the *Railway Age*, is Chairman of the Committee which has delegated Professor Charles F. Scott, of Yale University, New Haven, Connecticut to collect information which should be sent directly to him.

Cover Design

We wish to express our appreciation to our fellow member and artist, Mr. E. Andre Schefer for furnishing us with such an attractive cover design. The scene depicts a typical New Haven R. R. train of the eighties, along what is now the present Shore Line. New Haven R. R. trains of that period were noted for their lack of uniformity in the passenger equipment, thus flat top cars would frequently be found with monitor tops or gabled roofs. The locomotive is typical of that built in the shops of the road at New Haven, Connecticut.

New York Chapter Officers

At a meeting of the Directors of the New York Chapter of this Society, held on Tuesday, April 21, 1936, the following officers were elected to serve for two years: Mr. W. J. Coughtry, Chairman; Mr. L. B. N. Gnaedinger, Vice Chairman; Mr. Robert C. Schmid, Secretary and Mr. Carl F. Graves, Treasurer.

To those officers who have retired after two years of faithful service in getting the New York Chapter started and fully under way, they have the thanks and appreciation of the members and directors of the Society and to the newly elected officers, they have our best wishes and co-operation.

Canadian Railway Centenary

Word comes from Robert R. Brown, our Eastern Canadian Representative in the matter of the coming celebration this summer. First, there will be the Railway Exhibition in the Chateau de Ramezay Museum at Montreal which will be open from June 29th until September 7th. This exhibition will consist of pictures, drawings, documents, models, time tables, etc. and will be well worth visiting. The full sized model of the locomotive "Dorchester" will also be on exhibition and will remain permanently in the Chateau. Our members are cordially invited to visit this display of early Canadian material and to announce their presence to either Mr. Renaud or Miss O'Dowd of the Chateau.

Second, on Saturday, July 18th, will take place the centenary celebration. A special train will leave Montreal about 10.00 A. M. and appropriate ceremonies will be held at St. Lambert, Laprairie and St. Johns. The celebration will last all day. It is the hope that many of our members who reside in New England and New York will visit this celebration. Our own members in Canada have done much to make this event a success and it is the hope that a large number of our members will attend this celebration. For further details, address our Eastern Canadian Representative—Mr. Robert R. Brown.

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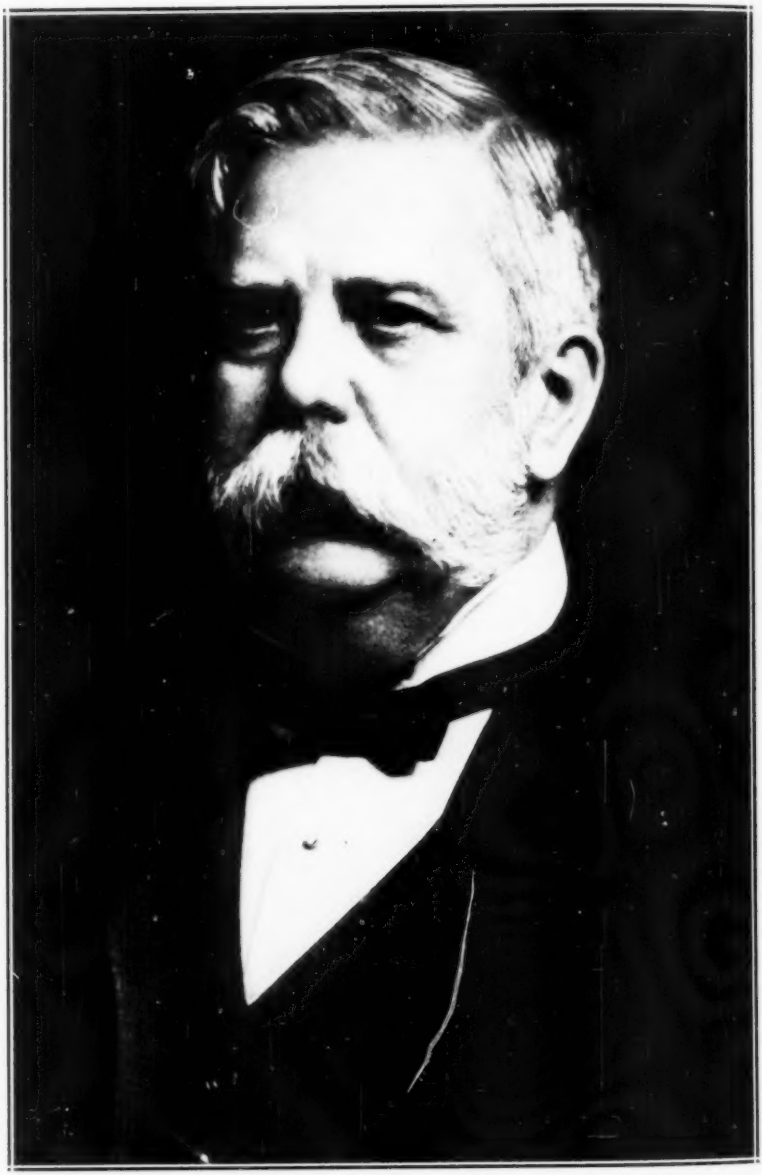


Courtesy Westinghouse Air Brake Co.

GEORGE WESTINGHOUSE

George Westinghouse

By Chas. E. Fisher

THE name of George Westinghouse will ever be associated with that of the air brake. With the many improvements which have taken place in all phases of railroading, it is difficult to accord them any seniority or rank. One thing is certain however, that high speeds and the use of long trains would have been impossible without this appliance. Moreover, the number of accidents which have been averted and the number of lives saved by means of this appliance have been countless. In fact, all your devices used on the trains and locomotives today might well go for naught were it not for the perfection of a braking system.

When that enterprising mine owner at Newcastle-on-Tyne conceived the idea of laying wooden rails in the road and running his cars thereon, he discovered he could haul the same loads with less tractive effort. He also discovered the need of some braking effort. One of the earliest and simplest forms used was a lever, pivoted to the side, near the center of the car, ordinarily held in place by a chain. When it was desired for use, it was liberated from the chain and pressed against the wheel by either the hand or the foot. Later devices used a block or shoe forced against the side of the wheel by combination of rods or levers thus augmenting the strength of the man applying the brake.

In 1833, Stephenson patented his steam brake. Here the steam pressure was made to take the place of a hand operated mechanism by which the force was applied through a system of rods. In this first form of power-brake we have all the elements of a complete power-brake, viz:

1. Source of power—steam.
2. Means whereby this power may be made to act upon the rods and levers of the brake rigging proper—a "brake" cylinder with movable piston and rod.
3. Connecting rods and multiplying levers to transmit and increase the pressure exerted on the brake piston—called the foundation brake-gear.
4. Means for transmitting the force exerted through the foundation brake-gear to the wheels as retarding force or 'pull"—this being the function of the brake-shoes as already explained.

In the case of the cars, the hand-operated brake, with various forms of foundation brake-gear, met all practical requirements for some time. However, during the first seventy years of the Nineteenth Century about 650 patents were granted in England for various kinds of brakes in railroad service.

The first pneumatic-brake was a vacuum-brake patented by James Nasmyth and Charles May in 1844. In 1848 Samuel C. Lister patented an air-brake having an axle-driven pump and suitable cylinder, pipe and connections on the various cars to constitute a straight-air equipment much the same as that which followed many years after, except that it was designed to be operated by the guard and not by the engineer.

While it is true that the earlier type of hand-brakes were improved,

it became increasingly evident that some kind of a "continuous" brake, under the control of the engineer was needed. In 1853 appeared the "Creamer" brake. This consisted of a large spiral spring attached to the brake-staff, at the end of each car, and which was wound up by the brakeman immediately after leaving a station. Attached to the mechanism was a cord which ran through the train to the engineer's cab, and the brake was so designed that when the engineer pulled the cord, the coil springs on each car were released and these at once wound up chains leading to the foundation brake-gear, thus bringing the shoes against the wheels.

The "Loughridge Chain-Brake" which came into use in 1855, consisted of a series of rods and chains continuously connected throughout the train. On each car were two pairs of small pulleys, each pair sliding toward the other upon an iron framework, but held apart by a spring; to each pair was connected a top rod leading to the foundation brake-gear. Upon the engine was placed a drum connected by a worm and gear to a small friction wheel. When a lever in the engineer's cab was pulled this friction wheel was brought into contact with the periphery of one of the driving wheels, thereby causing the drum to wind up the chain and shorten the length throughout the train; in so doing the pulleys upon each car were brought closer together, thereby applying the brakes. These are but a few of the various forms of continuous brakes, other than air-brakes, which were tried to a greater or lesser extent from time to time.

George Westinghouse was born in the village of Central Bridge, Schoharie County, State of New York, October 6, 1846. He was of American parentage, descended on his father's side from German ancestry and on his mother's from the Dutch. At the age of ten his parents moved to Schenectady where his father become a manufacturer of agricultural machinery. In his father's machine shop George learned the use of tools. He loved mechanical work, engineering and mathematics. Between school and college, he served in the Civil War, first with the cavalry and later as a naval engineer. On leaving college he invented a device for replacing derailed cars on tracks. Having constructed the device he traveled for the purpose of selling it, thus developing early in life the capacity for handling and financing his inventions that made him remarkable in an age remarkable for its men of constructive genius.

George Westinghouse has stated that his first idea of braking apparatus to be applied to all of the cars of a train came to him in this way; a train upon which he was a passenger between Schenectady and Troy in 1866 was delayed a couple of hours due to a collision between two freight trains. The loss of time as well as the possible loss of lives arising from this collision suggested to Mr. Westinghouse that if the engineers of those trains had had some means of applying brakes to all of the wheels of their trains, the accident in question might have been avoided.

Not long afterwards Mr. Westinghouse was in Chicago and through the kindness of Mr. A. N. Towne, Superintendent of the Chicago, Bur-

lington & Quincy R. R., was invited to inspect what was then considered an ideal passenger train, the Aurora Accommodation. This train was equipped with the Ambler brake. This brake consisted of a windlass on the locomotive which could be revolved by pressing a grooved wheel against the flange of the driving wheel to wind up a chain which extended beneath the entire train over a series of rollers attached to the brake levers of each car and so arranged that the tightening of the chain caused the brake levers to move thereby applying the brake shoes to the wheels. Mr. Westinghouse ventured to suggest to Mr. Ambler that he had been working upon a brake but Mr. Ambler advised him that he had devised the only feasible plan, which was fully protected by patents. However, Mr. Ambler's opinion and advice only proved a further incentive to Mr. Westinghouse.

At first Mr. Westinghouse considered the placing of a long cylinder under the locomotive, the piston to be connected to a chain that could be drawn tight by the application of steam, thus improving on the windlass arrangement. A study revealed that it would be impossible to have a cylinder long enough to operate a chain brake upon more than four or five cars. His next thought was to place a cylinder under each car but a little experimentation showed that even in warm weather this was impossible.

Shortly after this, Mr. Westinghouse was induced by a couple of young women who came to his father's works to subscribe to a monthly paper. In one of the first numbers he received was an account of the construction of the Mount Cenis tunnel—the machinery being driven by compressed air conveyed through 3,000 feet of pipes, the then depth of the tunnel. This indicated to George Westinghouse that compressed air could be operated upon a train of any length and in 1867 he filed a caveat in the United States Patent Office to protect the invention. In the meantime he moved from Schenectady to Pittsburgh and here he met Mr. Ralph Bagaley, who undertook to defray the cost of constructing the apparatus needed to make a demonstration.

By the autumn of 1868, after much difficulty, this apparatus had finally been completed in a machine shop in Pittsburgh. This consisted of an air pump, a main reservoir into which air was to be compressed for the locomotive and four or five cylinders to be placed under the cars with the necessary piping, all so arranged that their operation upon a train could be observed. Officials of the Pennsylvania and the Pan Handle Railroads were then invited to inspect the apparatus and witness its operation. As the result, Mr. W. W. Card, Superintendent of the Pan Handle R. R. offered a train known as the Steubenville accommodation in order to make a practical demonstration. The apparatus was removed from the machine shop and applied to this train which consisted of a locomotive and four cars. On the first run, upon emerging from the tunnel near the Union Station, Pittsburgh, the engineer saw a horse and wagon standing upon the track. The instantaneous application of the air brakes prevented what might have been a serious accident and the value of this invention was thus quickly proven and the device started upon a useful and successful career.

Some years ago a dispute arose as to the indentity of the engineer of this first air brake train and an investigation was made by the Pennsylvania Railroad. The honor of handling this train in April, 1869, belongs to one Daniel Tait, one of the best known and best liked engineers in the Pittsburgh District. His statements are of interest to all students of railroad history:

"Yes, your Uncle Dan ran the first air brake train. Moreover he, along with Nick Johnson and Harry Frazer, helped George Westinghouse put his first air pump on an engine. We put it on the No. 23, a little eight-wheel 'Dickie' Norris engine. The air pump was one made over from an old Worthington water pump and lay flat on its back on the running board outside of my front window. I'll never forget —it had a leather packing in the air cylinder. After a while Mr. Westinghouse took this pump off and put on one that stood upright on the side of the boiler, and we used to take turns pushin' and pullin' at the 'trigger' valve motion to keep it going when it wanted to 'lay down'.

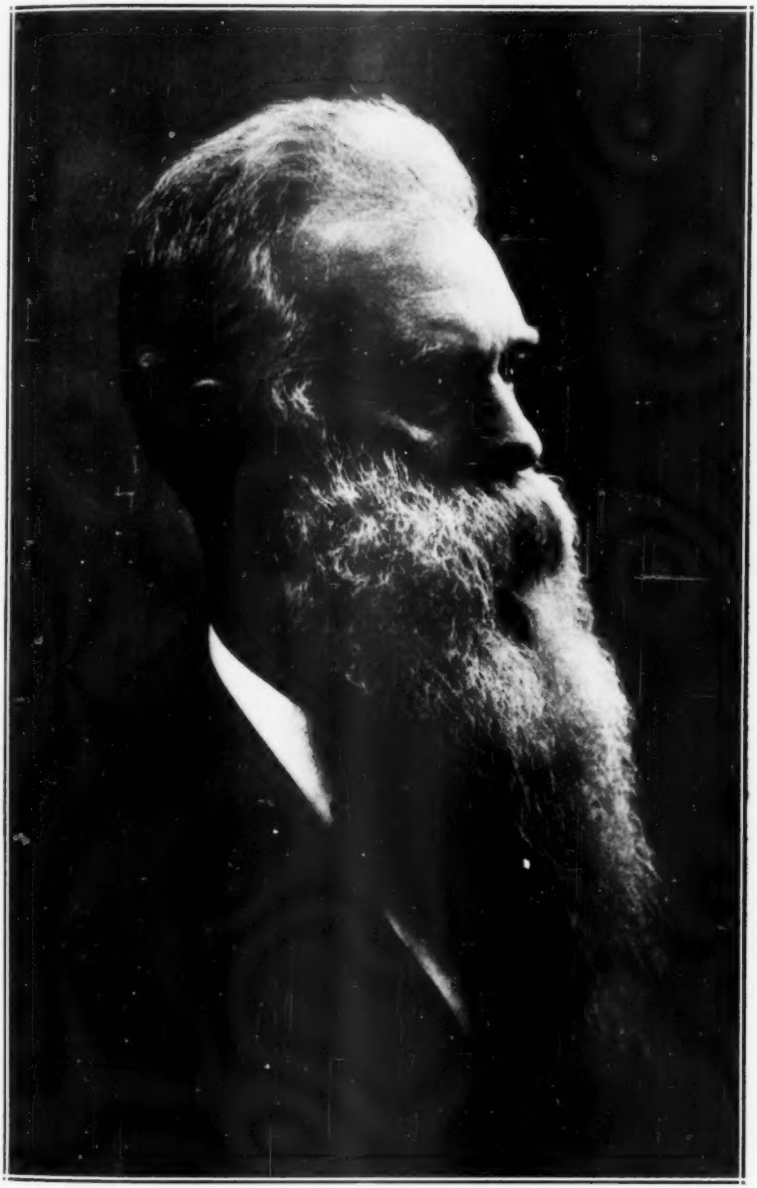
"While the brakemen liked the new brake, the president of the road objected, for it seemed always to be getting out of order. Hanged if it didn't seem to go wrong every time he was on the train. But there was never a trip but what it worked part of the time. When it got out of order and we had to go back to the hand brakes, we worked all night but we got it in shape for the next day's trip. I was only too glad to work on it nights, for I saw it was a 'comer' and told Mr. Westinghouse so.

"From the very first stop I made with it—the stop at Fourth Avenue, Pittsburgh, the first trip, the stop where the Westinghouse air brake drew its first breath of life—I saw it was a wonderful thing. Mr. Westinghouse was in the cab of the engine with me on that run. It seems queer but the first emergency stop was also at Fourth Avenue, Pittsburgh, when I made a second trip.

"A coal train without a red flag out as usual, tried to pass over ahead of me. I didn't see her until she came from behind the high coal fence, and then she was not more than forty feet away. I banged on the air and things looked bad for all hands. The waiting passengers on the station platform scattered and ran in a panic. When the train stopped the '23's' pilot stood off just four feet from the coal train. That was a fine exhibition stop."

In the development and introduction of the air brake it soon became apparent that the apparatus would have to be uniform upon all cars to provide for the convenient change of the make up of trains; that some power brake would inevitably be universally applied to all of the cars and engines upon all railroads. These ideas indicated the importance of having all the brake apparatus made by one company, so as to insure absolute uniformity and consequent interchangeability and this led, early in 1869, to the formation of the Westinghouse Air Brake Company.

Mr. Westinghouse realized that if he wanted to do business with the railroads, he must have practical railroad men associated with him in the formation of his company. He demonstrated this by inviting railroad men to join him in the incorporation of the company. Of the seven men who were the founders of the Westinghouse Air Brake Company, five were railroad men. These were A. J. Cassett, at that time Master Mechanic of the Pennsylvania R. R. at Altoona, Pa., later President of the Pennsylvania Railroad; Edward H. Williams, Superintendent of Motive Power, Pennsylvania R. R. at Altoona, Pa.; George D. Whitcomb, Purchasing Agent of the Pan Handle Railroad at Steubenville, Ohio; W. W. Card, Superintendent of the Steubenville Division of the Pan Handle Railroad at Steubenville, Ohio; later joining



Courtesy Westinghouse Air Brake Co.

DANIEL TAIT
Engineer of the First Air Brake Train in America.

the forces of the Air Brake Company and Robert Pitcairn, Superintendent of the Pittsburgh Division of the Pennsylvania Railroad at Pittsburgh, Pa. These men, together with Mr. Westinghouse and Mr. Bagaley, were the seven men who laid the foundation of the Westinghouse Air Brake Company, incorporated September 28, 1869.

In September, 1869, the Pennsylvania R. R. arranged to have the new brake applied to the Walls accommodation. This train made daily trips between Pittsburgh and Walls, now Pitcairn and here it was so successful that within a short time all through passenger trains were equipped and thus the Pennsylvania R. R. was the first to adopt and use the Westinghouse Air Brake as standard equipment. This train was also placed at the disposal of the Association of Master Mechanics, then in session at Pittsburgh. The train was run to Altoona and the air brakes used exclusively for controlling the speed of the train on the Eastern slope of the Alleghenies and special stops were made at the steepest portions of the line in order to demonstrate the power of the brakes to stop the train in what was believed and was then an incredibly short distance.

In November, 1869, a train of ten cars was equipped with these brakes, on the Pennsylvania R. R. and the train taken to Philadelphia in order to demonstrate to the directors of that road the success of the apparatus. A large number of railroad officials witnessed these trials at Philadelphia, among them was Mr. George L. Dunlop, General Superintendent of the Chicago & North-Western Ry. As the result of his inspection, he offered, if the Pennsylvania R. R. would send a train for the purpose, to invite the leading railroad men in his vicinity and have a demonstration in Chicago. The apparatus was then transferred to a new locomotive and six new cars and this train was run to Chicago over the Ft. Wayne Road and a number of tests were made upon the tracks of the Chicago & North-Western Ry. From Chicago the train was run to Indianapolis, where additional tests were made and finally returned to Pittsburgh.

The outcome of these demonstrations was immediate orders for equipment for the Chicago & North-Western; Michigan Central; Union Pacific; Old Colony and Boston & Providence Railroads.

Works were built at Pittsburgh for the manufacture of the apparatus and they were fitted with the best tools obtainable. Standards were adopted and adhered to in the parts of the equipment which required uniformity in construction in order to insure interchange of rolling stock so fitted upon various roads. This course had an important bearing in the decisions of the Railway Master Mechanics and Master Car Builders in the question of the standardization of various parts in order that repairs could be more conveniently made.

It soon developed that it took considerable time to apply the brakes with full force and a longer time to release them. In the event of a break-in-two, a frequent occurrence in those days, the rear section would be uncontrolled and if this occurred on an ascending gradient, the rear section would run away with disastrous results. To overcome this difficulty a new development was necessary and this has since been called the automatic brake.

In the automatic brake the air-pump, reservoir, train pipe and brake cylinder were retained as in the so-called "straight air brake." Two important features were added however. On each car and locomotive tender was placed an auxiliary reservoir and on each car and locomotive tender a triple valve was placed between the brake pipe, brake cylinder and auxiliary reservoir. This triple valve was so constructed that when air was admitted to the train pipe, an opening was established between the train pipe and the auxiliary reservoir whereby the train pipe and reservoir were filled with air under pressure. The valve also opened a passage from the brake cylinder to the atmosphere. This was the normal condition of the apparatus when the brakes were off. To apply the brakes, the engineer discharged a portion of the air from the train pipe, whereupon the triple valve closed the connection between the brake pipe and the reservoir and between the brake cylinder and the atmosphere and then opened a passage from the auxiliary reservoir to the brake cylinder. The piston in the latter was moved outwardly by the air from the auxiliary reservoir so as to apply the brakes. The restoration of the pressure within the brake pipe released the brakes and recharged the reservoir. This improvement was made during the years 1872-1873.

This automatic brake was supposed to be instantaneous in its action in applying the brakes and almost instantaneous in releasing them. In the event of an escape of air from the train pipe by its rupture or separation of the train, the air in the auxiliary reservoirs instantly and automatically applied the brakes to all parts of the train and they could be released only by restoring the pressure or by special release valves operated by the train men. This automatic brake proved to be vastly superior to the straight air brake and it soon became standard. During the period of conversion an automatic brake was easily converted into a plain brake by a manually operated special valve arranged in the casing of the triple valve.

The increase in the length of freight trains and the numerous accidents due to lack of brake control indicated the need of automatic brakes on freight equipment. To determine the practicability of the automatic brake for this purpose, a train of fifty cars was fitted up and taken over the Alleghenies on the Pennsylvania Railroad and the tests made demonstrated that such a train could be controlled on the heaviest gradients by this means. This was in the early '80's.

In 1885 the Master Car Builders appointed a committee to report upon the feasibility of the application of brakes to freight trains. This committee inaugurated what are now known as the Burlington (Iowa) brake trials made in 1886 and 1887. At these trials were two trains fitted with air brakes, one fitted with a vacuum brake and one fitted with the brake operated by means of attachments to the drawbars similar to the conception first referred to. Each of these trains had fifty cars and the tests proved the inadequacy of the type of automatic air brake then presented by the Westinghouse Air Brake Company, as well as the inadequacy of all the other brakes then tested. The lack of success was due to the comparatively slow application of the brakes upon the rear portion of the train, the effect of which was to cause a series of shocks almost like collisions.

As a part of the automatic air brake passenger equipment, Mr. Westinghouse had developed in the '70's a system of train signaling involving the use of a second train pipe, which is now in general use upon all railways. This signaling apparatus had a sensitive valve connected to a small reservoir on the locomotive and so arranged that when compressed air was admitted through a small opening into the signal pipe, both the pipe and reservoir were charged to a low pressure. By opening a valve at any point in the train to permit a small quantity of air to escape from the signal pipe, the delicate valve referred to was caused to move so as to admit air from its auxiliary reservoir to blow a whistle located in the locomotive cab. Upon experimentation, it was found that when the valve in any car remote from the engine was quickly opened and closed as many as five times, the whistle would blow an equal number of times, the first time being after the last escape of air; that is to say, there were set in motion five distinct waves of air each capable of doing work. During these developments it was found that waves of air within the brake pipe travelled as rapidly as sound—about 1100 feet a second.

Thus the idea that if a wave of air which was utilized for signaling could be made to operate the triple valves upon the cars, there would then be an almost instantaneous application of the brakes upon the front, rear and other portions of the train. After many experiments this idea was incorporated into what is now known as the quick-action automatic brake.

The Westinghouse train was left at Burlington in order that the new triple valves with the quick action attachment could be applied and further experiments made. The valves proved successful and the tests made with this train after their application were satisfactory to the railroad officials. It was arranged to take this train to Minneapolis, St. Paul, Milwaukee, Chicago, St. Louis, Cincinnati, New York, Albany, Boston and New England, Washington and thence to Pittsburgh, innumerable demonstrations being made enroute. The train was drawn by two locomotives, was frequently run at speeds above fifty miles an hour and the tests were witnessed by all of the prominent railroad people of the country. So great was the demand for good brakes on freight trains that considerable difficulty was at first experienced in promptly filling the orders of the railway companies. The wide publicity of the tests, coupled with the public demand for the adoption of a means to prevent accidents brought about the enactment of a law by Congress obliging the railways to apply air brakes and automatic couplers to all freight trains in the United States within a time named by the Act, which time was subsequently extended because it was physically impossible for the railway companies to make the introduction within the time first prescribed. The quick action automatic brake was operated like the first automatic brake for ordinary train movements; the quick action resulted only when it was necessary to apply the brakes for an emergency.

Increasing length of trains and weight of equipment has caused the Westinghouse Air Brake Co. to be ever on the alert to make improve-

ments brought about by the new conditions. The improved triple valve has the emergency feature but it also has the quick-service application feature, that is, for ordinary purposes the air is admitted to all of the brake cylinders so quickly that the longest freight train can be handled with almost the same precision as that of the much shorter passenger trains. Higher speeds of passenger trains have necessitated the redesigning of all of the passenger train brake apparatus including the method of attaching the brake shoes to the cars and the levers and connections in order that the required pressure may be brought to bear upon the wheels. The development of the Westinghouse Air Brake is the result of a company ever on the alert to keep its apparatus to the point where it would meet the changed conditions and the splendid co-operation on the part of the railroad officials. The idea in the development and introduction of the brake has been an adherance to such uniformity of apparatus that the interchange of traffic over various roads would go on without interruption. Without such standards, it is doubtful if train brakes would have come into general use. At a banquet given in Washington to the members of the International Railway Congress, May, 1905, a diplomat, in speaking on the subject of the importance of railway brakes, said he felt safe in saying that the air brake had saved more lives than any General had lost in battle.

George Westinghouse was only twenty-three years of age when he organized the Westinghouse Air Brake Company in 1869. The year following he made his first trip to Europe to introduce his air brake in those countries. In 1871 he inaugurated the Saturday half holiday at the Air Brake Company, an innovation since almost universally adopted. In 1876 he designed and built a complete automatic central telephone exchange system but he was too busy with other matters to continue experimenting with it. In 1879 he invented a pneumatic system of interlocking signals operated by compressed air and in 1881 the Union Switch & Signal Co. was organized to manufacture this apparatus. In 1884 he invented a system for transmitting natural gas through pipes and a meter for measuring same. Realizing the possibilities of the alternating current, in 1885 he purchased the transformer patents of Goulard and Gibbs in England and the year following organized the Westinghouse Electric Co. His faith in the alternating current has been more than justified. In 1897 he secured the patent rights from Charles A. Parsons of England for a steam turbine and the following year steam turbines were installed in the plant of the Westinghouse Air Brake Company at Wilmerding. His reduction gears were tried by the United States Navy, the first being installed on the Collier Neptune.

George Westinghouse died in New York, March 12, 1914. Much has been written about his foresight, but perhaps one instance will serve for an example here. When the Interborough Rapid Transit Co. of New York City, was compelled to lengthen its trains owing to the enormous increase in traffic and to operate these trains at closer intervals and at higher speeds, they found they must save time, not by minutes but by seconds in making up and coupling and uncoupling the cars. This included the air and electric connections. Foreseeing just such a

condition, Mr. Westinghouse had invented and perfected an automatic coupler which not only held the cars rigidly together as a solid train, but also with a single motion coupled or uncoupled the cars and the electric and air connections. His original invention, developed a dozen years before its need included steam connections as well, but the latter were not needed on the electric trains. The subway trains were the first to adopt it and thus all the time of experimentation was saved to them.

"His achievements were great but greater than all was his character. From association with him men caught inspiration. He radiated enthusiasm and energy. He demanded honest work and honest dealing. He imposed no limitations upon his own hours, nor upon his own output of energy. He believed sincerely that his mission was to be useful; and he was useful to the extent that few men ever dreamed of being. His personality was both compelling and persuasive. You believed in that clear-eyed, enthusiastic man whose face was lighted with eagerness and sincerity. And they that were associated with him gave him their loyal affection. He was tireless and knew no fear. He was considerate of other men, especially of labor, and his men knew that. They knew he was the most constant worker in all the Westinghouse forces; that he could do whatever any of them could do. Their faith was never shaken. His integrity was as firm as a mountain range. His tastes were simple; his honor never tarnished; his life was open for all to read; he was free from any desire for parade. It was true of him that he never cared for wealth as a possession; he valued it only as a tool, an instrument which enabled him to carry out his ideas. He was as unostentatious at the height of his power and fortune, as when he was obscure in youth. He was a great man:—

'* * * take him for all in all,
We shall not look upon his like again.'"

In a speech presented at the Annual Meeting of the American Society of Mechanical Engineers on December 6, 1910, Mr. Westinghouse took pains to deny the popular story of an alleged interview between Commodore Vanderbilt and himself about the application of air brakes on the New York Central R. R. There was no foundation for that story. In fact, from the time the air brake demonstrated its practicability to the present time, there has been only the most harmonious relations between the railroad officials and those of the Westinghouse Air Brake Co. Thanks to George Westinghouse we have one of the finest devices ever used for the braking of trains. His persistence and his faith in it made it a success but we must not lose sight of the fact that "Uncle Dan Tait", the engineer of the first air brake train also believed that it was a "comer."

In closing, the author wishes to acknowledge his thanks and appreciation to the officials of the Westinghouse Air Brake Company for their kindness in placing at his disposal the material necessary for the preparation of this paper.

History and Motive Power of the New York, Ontario & Western Railroad

By G. M. Best

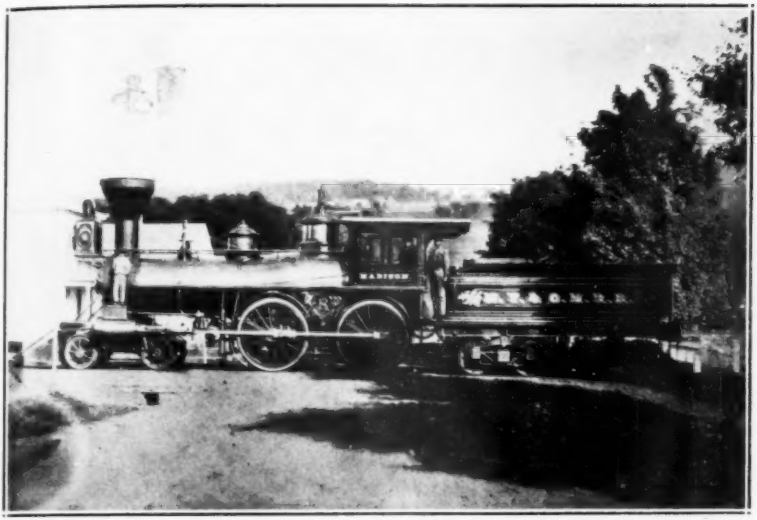
ON December 15, 1865, a group of business men met in New York City and organized the New York & Oswego Midland Railway. Their purpose was to build a line connecting the Lake Ontario port of Oswego, N. Y., with New York City by a direct route through the rich farming country of Southern-Central New York State, providing that district with an outlet direct to the seaboard.

Incorporation papers were filed on January 11, 1866, the proposed route as then stated being to build a line from a point opposite New York City, in New Jersey, through the northern tip of New Jersey to Middletown, N. Y., thence to Walton, Sidney, Norwich and Oneida to Oswego, with an extension to Buffalo from Norwich. Little did these men dream that their proposed trunk line for agricultural products and other general freight would one day become a highly specialized carrier of anthracite coal, with a large part of the original main line reduced to the status of a branch; with passenger service seasonal and of minor importance.

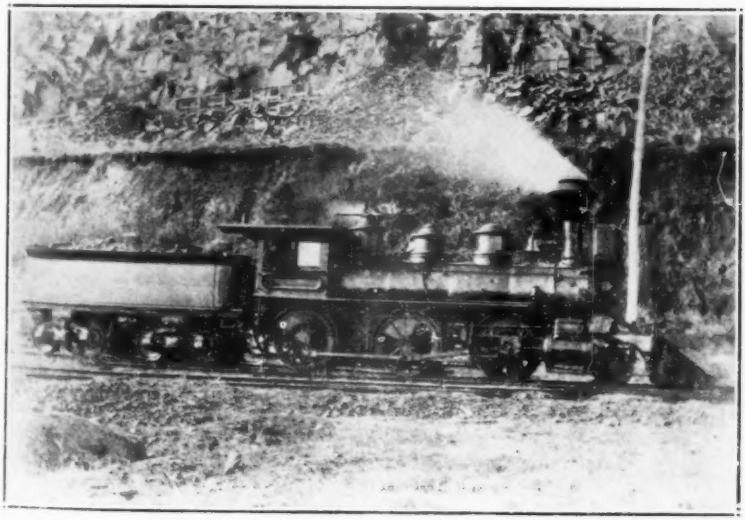
To the engineers who made the survey for this line, the task must have been difficult, as the route, unlike the Erie or the New York Central, could not follow a river valley for hundreds of miles, but took the hard way across a series of river valleys and intervening mountain ranges that ran at right angles to the general direction of the railroad. This necessitated building high trestles, tunnels and long fills, so that from Middletown to Norwich, the line today represents as varied a piece of railroad construction as can be found east of the Rockies, a fact little known to the general public, since no through passenger trains have run over it in recent years.

Construction of the road took four years, and was intended to cost but $12,000,000, but by the end of that period a sum of $26,284,394.04 had been expended, with the inevitable receivership following. The construction was done in three sections and almost resulted in three different railroads; it actually ended with two. The northern section, from Norwich to Oswego, was begun on June 24, 1868, amidst great ceremony at Norwich, and by using crews working north and south from Oneida, as well as both ends of the section, the grading and track laying was completed so that the first train could be run from Oneida to West Monroe on August 29, 1869. The Southern section did not start as soon as the northern end, and during the interim, became separated from the original plan, being organized as a separate unit known as the New Jersey Midland, chartered July 13, 1870, with the bonds guaranteed by the N. Y. & O. M.

The New Jersey Midland was not informally so-called, but was a separate and distinct unit, with terminals at Jersey City and Middletown and cars and locomotives lettered with the N. J. M. initials. Early timetables published in the New York papers show the name sometimes



New York & Oswego Midland R. R. "Madison" Rhode Island, 1869.

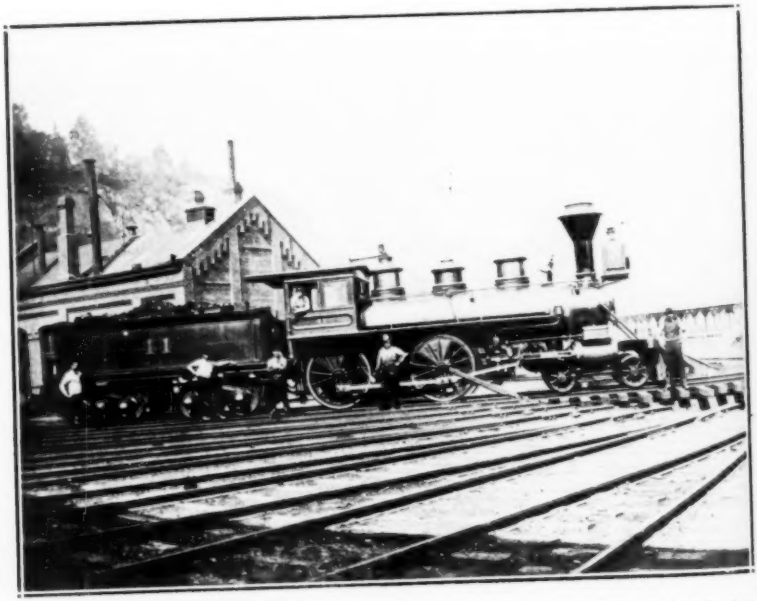


Courtesy of W. A. Lucas.

New York & Oswego Midland R. R. #45. Baldwin, 1872.

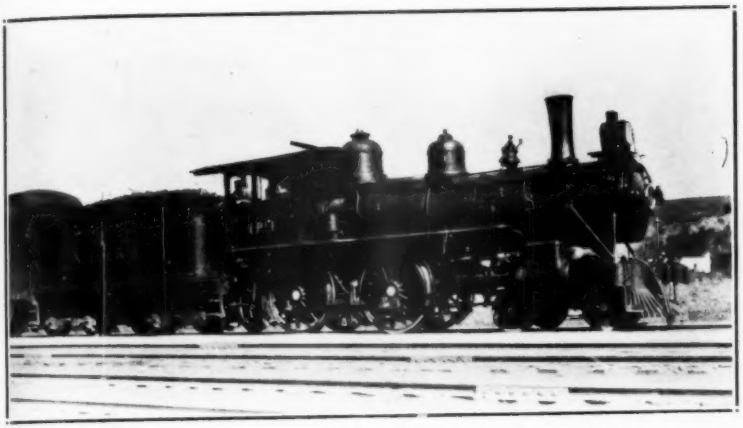
Courtesy of Arthur Curran.

N. Y. O. & W. #13. Rebuilt, Cooke—1897.



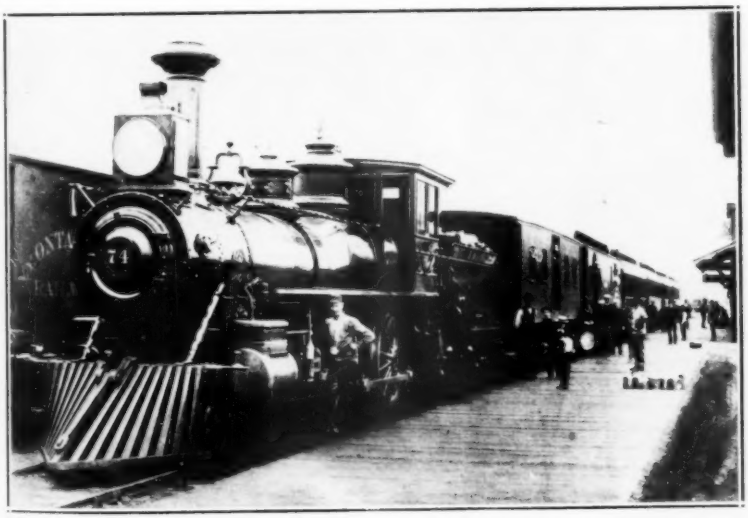
From Smith Collection.

N. Y. O. & W. #41. Baldwin, 1872.

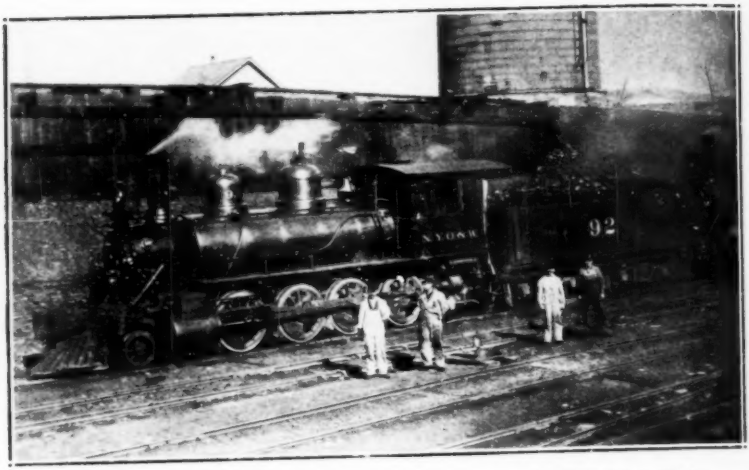


Courtesy of K. E. Schlachter.

N. Y. O. & W. #69. N. Y. Loco. Wks., 1889.



N. Y. O. & W. #74. Brooks, 1887.



Courtesy of A. L. Weeden.

N. Y. O. & W. #92. N. Y. Loco. Wks. 1888.

Courtesy of K. E. Schlachter.

N. Y. O. & W. #137. Dickson, 1892.

as New York-Midland, and sometimes as New Jersey-Midland. Apparently for a short time at the start, it was intended to call the system New York-Midland, as some of the Baldwin engines delivered to the road in 1872 were so lettered, while the Rhode Island engines were lettered N. Y. & O. M., being first delivered to the Northern section of the road. It is not the intent of this article to deal with the New Jersey Midland in detail, but merely to state such historical facts as are important in connection with the parent road. From Jersey City, the line extended through Hackensack, Paterson, thence in a northwesterly direction through Franklin, Sussex and Unionville to Middletown, N. Y., from Unionville the line using the existing tracks of the Middletown, Unionville & Water Gap Railroad. The latter road was leased from Middletown to the New Jersey State Line in 1874 and was returned to its original owners in 1913.

While the New Jersey Midland was being built, the central section from Middletown to Norwich was completed as far as the summit of the Shawangunk mountain range near Bloomingburg, where a long tunnel had to be cut through. Track and grading work proceeded west of the tunnel, however, to such an extent that when the tunnel was completed on Feb. 2, 1872, trains were run to a point north of Liberty, N. Y. During this time the line construction proceeded south of Norwich, and on July 9, 1873, the two units met at Swirling Eddy, N. Y., just north of Roscoe, and the last spike was driven. The first train to run over the entire main line left Oswego July 10, 1873, loaded with flour, and made the run through to Jersey City in 24 hours. The first passenger train left Jersey City on August 18, 1873, arriving at Oswego the same evening.

Considering the country over which the central section was built, work was completed in very good time. To cross Northfield mountain between Sidney and Walton, it was necessary to construct a double switchback, as a tunnel through the mountain was too expensive to consider at that time. Added to this switchback were constant crossings of the branches of the Delaware, the Unadilla, Chenango and Susquehanna rivers, and during this work some remarkable curved trestles were constructed which exist today in the form of curved steel bridges. At Sidney Center, now Maywoods, one of these trestles formed the large part of a 180 degree curve, similar to the many loops later to be made famous on the Colorado Midland and other western roads. Noteworthy also was the Lyon Brook bridge, 818 feet long and 165 feet high, called the "Iron Trestle" when built, as most of the other trestles were of wood. This bridge was replaced in 1894 by the present steel bridge, and the Northfield switchback was eliminated by a tunnel in 1893.

During construction of the main line, branches were built at various points, the largest being the ill-fated Buffalo extension, known later as the Auburn branch. The Utica branch, organized as a separate road known as the Utica, Clinton & Binghamton R. R., was the first one to be completed, being built from Smith's Valley, now Randallsville, to Utica, in time for a passenger train to be run from Utica to Norwich on October 8, 1869, bearing an excursion of Knights Templar. Branches were

built from Walton to Delhi, from a point near Sidney to New Berlin, later to be extended to Edmeston, from Clinton on the Utica Branch to Rome, and from Summitville to Ellenville. Power for the Utica, Clinton & Binghamton was furnished by the Midland and the road was absorbed in 1882. A branch was also built from Middletown to Pine Bush as the Middletown & Crawford R. R., later to be sold to the Erie. The Scranton branch which was so markedly to affect the affairs of the road was not built until 1890.

The chronicle of the Auburn branch is a story unto itself. Begun in 1870 during the time when construction of the main line was at its height, and ready money was still available, this branch was rapidly extended north of Norwich to DeRuyter, where it turned in a westerly direction to Cortland, connecting there with the Ithaca & Cortland Railroad Co., which had been completed from Ithaca to Cortland in 1871. By lease agreement, the Midland obtained the use of the Ithaca & Cortland tracks from Cortland to a point just west of Freeville, where it branched off to the north high above the eastern shore of Cayuga Lake, with Auburn as its immediate destination, and eventually Buffalo. Upon completion of the Buffalo line it had been planned to compete with other carriers for the Great Lakes trade, an ambitious undertaking considering the water-level route of such roads as the New York Central as compared to the hill and dale contour of the Midland.

When the line reached Scipio Centre, 12 miles south of Auburn, the road was beginning to feel the financial pinch to such an extent that it was decided to cease further work on the branch until the main line was completed. Regular mixed trains were run on the branch as far as Cortland beginning June 5, 1872 and on October 30, 1872, a grand free excursion was run from Cortland to Venice, a few miles south of Scipio Centre. There was a turnout of 5000 people and necessitated hooking on a number of flat cars to accommodate the overflow. According to the Cortland paper of that date, "they were served a bountiful collation in a mammoth tent". On December 16th regular passenger service was begun over the branch from Scipio Centre to Norwich, but the traffic created fell far below expectations and within a year the service was curtailed to three trains a week.

In 1874 when the road went into receivership, the section of the branch between Cortland and DeRuyter was leased to the Ithaca & Cortland R. R., which took possession Oct. 6, 1874, running two trains a day from Ithaca to DeRuyter. The Midland ran one train a day from Norwich to DeRuyter which made no connection with the Ithaca & Cortland, so it took two days to go from Norwich to Cortland. This arrangement aroused such a protest from the towns along the line that a through train was run from Norwich to Elmira over the newly constructed Ithaca-Elmira line (part of which was abandoned in June 1935). In 1875 the Utica, Ithaca & Elmira R. R., formed of the previously mentioned units, took over the DeRuyter-Cortland section, but in 1876 the Midland again assumed control of the whole branch. The "Forgotten man" section of the branch, from Freeville to Scipio Centre, got along with sporadic service until 1879, when it was sold to O. F. Peete of New York City for

$25,000 and in later years was extended into Auburn, and into Ithaca by another route, forming a competing line between Ithaca and Auburn with the Lehigh Valley and being known as the Ithaca, Auburn & Western. It was torn up in 1920.

In 1878 passenger service was discontinued on the Auburn branch, with that part controlled by the Ithaca-Elmira line passing permanently into their hands, although the Midland sent one freight train a week up to Scipio Centre. In January 1879 when the receivership of the road was terminated, the branch was abandoned and the track torn up from DeRuyter to Norwich. Fifty-five years later the right of way of this line can still be traced in many spots north of Norwich, and it was not until 1930 that the old roadbed was sold to property owners along the line.

In the meantime the parent company went into receivership following the depression of 1873. Default on the bond payments resulted in G. A. Hobart being appointed receiver for the New Jersey Midland, and A. S. Hewitt for the parent road. It was decided to divorce the New Jersey unit entirely and Mr. Hewitt turned over to the New Jersey Midland such locomotives and rolling stock as were needed to operate it as a separate system, as it had hardly any of its own. From that time on, relations between the two roads became so strained that by November 1874 the parent road was transferring its through freight to the Erie Railway at Middletown, claiming that the New Jersey Midland held up its freight in the Jersey City yards. Passenger trains continued to be hauled through from Oswego to Jersey City via Middletown without change, however, until 1883 when the new line from Middletown to Weehawken was opened.

The New Jersey Midland continued its separate existence, being reorganized first in 1880 to the Midland R. R. of New Jersey, and again in 1881 to the New York, Susquehanna & Western, a name which it bears today as a subsidiary of the Erie. Contrary to opinions the writer has often heard expressed, the N. Y. S. & W. was not originally projected as a coal carrier into Pennsylvania via the Delaware Water Gap, but was a unit of a trunk line extending to Lake Ontario. It might be of interest to note that the section of the line from Middletown to the New Jersey State line just south of Unionville was turned back to its original owners in 1913 and became the Middletown & Unionville R. R., still in operation.

The N. Y. & O. M. in receivership ran into difficulties with the tax collectors, and late in 1874 the levies from taxes became so great that it was impossible for the road to do business, so that on February 27, 1875, the entire road was shut down, the locomotives being stored in the shop buildings along the line, and the coaches, freight cars and miscellaneous rolling stock at Guilfort Summit, where there was a large amount of trackage. Temporary freight service between Sidney and Utica was maintained by the Delaware & Hudson Canal Co. R. R., until an agreement with the tax bodies was reached, and service over the whole system was restored about 30 days after closing down. The receivers operated the road until Nov. 14, 1879, when it was sold under foreclosure at

LAKE ONTARIO
OSWEGO
FULTON
CENTRAL SQUARE
CLEVELAND
SYLVAN JCT.
PENNELLVILLE
ONEIDA LAKE
ONEIDA
UTICA
ONEIDA CASTLE
CLINTON
AUBURN
STOCKBRIDGE
ORISKANY FALLS
EATON
BOUCKVILLE
HAMILTON
SMITHS VALLEY (RANDALLSVILLE)
EARLVILLE
SCIPIO CENTER
CAYUGA
TRUXTON
DE RUYTER
SMYRNA
EDMESTON
VOORHEESVILLE
GENOA
CORTLAND
OTSELIC
NEW BERLIN
S. NEW BERLIN
LANSING
FREEVILLE
INGLEWOOD HILLS
PLYMOUTH
NORWICH
ITHACA
MT. UPTON
SIDNEY
SIDNEY CENTER
FRANKLIN
DELHI
WALTON
HAMDEN
ROCK RIFT
NEW YORK
PENNSYLVANIA
CROSSIA
EAST BRANCH
HANCOCK
CORBETT FALLS
LIVINGSTON MANOR
KINGSTON
HIGH FALLS
LIBERTY
DE FALLSBURG
ELLENVILLE
ORSON
FOREST CITY
CARBONDALE
MONTICELLO
SPRINGVILLE
PINE BUSH
ST JOSEPHS
WHITEBORO
GREENWOOD
OAKLAND
CRAWFORD JCT
CAMPBELL HALL
MIDDLETOWN
CORNWALL
MAYFIELD
OLYPHANT
SCRANTON
PORT JERVIS
UNIONVILLE
WEST POINT
HUDSON RIVER
NEW YORK
NEW JERSEY
FRANKLIN
NEW JERSEY MIDLAND
PENTON JCT
PATERSON
HACKENSACK
JERSEY CITY
WEEHAWKEN
NEW YORK
EXISTING MAIN LINE
BRANCHES
ABANDONED BRANCHES
NEW JERSEY MIDLAND

Middletown, and reorganized by a group of New York investors, among whom was Jacob H. Schiff, later to become famous in railroad financial circles.

Under the name New York, Ontario & Western, financial aid was obtained to take care of the difficult transfer situation at Middletown, by building an extension from Middletown to Weehawken, on the New Jersey side of the Hudson opposite New York. The route ran due east from Middletown to the west bank of the Hudson at Cornwall, south through West Point, tunneled through Haverstraw mountain to the flatlands south of it, and thence to a point two miles west of Weehawken, where a tunnel was cut through the Bergen hills to the waterfront. This line was begun in 1881, and co-incident with it was organized the New York, West Shore & Buffalo, which extended up the Hudson north of the N. Y. O. & W. at Cornwall, to Albany and Buffalo, as a competing line with the New York Central, which quickly absorbed it in 1886. There seems to be a confusion of records as to whether the N. Y. O. & W. tracks were completed before the West Shore project got under way, or vice versa, but old newspaper accounts seem to indicate that the lease agreement was completed after the extension was completed and N. Y. O. & W. trains were running over it, as it included taking over the N. Y. O. & W. ferries across the Hudson to New York. A newspaper account in 1886 said these ferry boats were turned over to the West Shore as part payment for 10 consolidation type locomotives which the West Shore sold to the N. Y. O. & W. These engines were numbered 80 to 89. The new line was finished May 1883, and thereafter all N. Y. O. & W. trains operated over it east of Middletown, and on January 1, 1886 the West Shore took over the section from Cornwall to Weehawken, so that since that date N. Y. O. & W. trains have operated over it through trackage rights.

In 1889 the Ellenville branch was extended to Kingston, the New Berlin branch to Edmeston, and a connection was made at Summitville with the Port Jervis, Monticello & New York Railroad, which built an 18 mile extension from Huguenot to Summitville. Most important of all, however, was the organization of the Ontario, Carbondale & Scranton railroad in that year, with construction of the line begun the same year and completed in 1890, when it was turned over to the N. Y. O. & W. for 99 years. It extended from Cadosia on the N. Y. O. & W., to Scranton, Pa., tapping the rich anthracite coal fields and enabling the road to become a coal hauling agency not only for the New York district, but into the New England states over the newly constructed Poughkeepsie bridge.

This branch today handles a large majority of the freight hauled by the road, and also requires a large part of the road's power, as it is over a rough and hilly country, with many grades, including a long trestle over part of the city of Carbondale, Pa., where it was not possible as late as 1889 to get a right of way through the city at ground level. Large yards were built at Mayfield, Pa., just south of Carbondale, and here most of the coal trains are assembled. Passenger service on the Scranton branch was abandoned several years ago, never having been important.

The last piece of trackage besides the extension of the Ellenville branch to Kingston was the acquisition of the Port Jervis and Monticello branches by stock control in 1905. In 1904, the New York, New Haven & Hartford R. R., seeking a source of anthracite coal, bought stock control of the N. Y. O. & W. through Kuhn, Loeb & Co., at a price of $14,000,000, and has since operated the road as a separate unit. The coal traffic of the road today accounts for nearly 80 percent of its revenue, that from coal alone having been in excess of $5,000,000 in 1933. Passenger revenue has steadily declined. Main line passenger service is still heavy during weekends in the summer from Weehawken to Roscoe, but it has been discontinued altogether north of Oneida. Some idea of the amount of passenger business the road once enjoyed can be obtained from the inventory of passenger cars, which totalled 368 in 1933, a large number for a road having no commuter service or limited trains. The only branch having passenger service today is the Kingston branch, although the Delhi branch has mixed train service. However, the road has found its field of usefulness in hauling coal, and can boast of a net operating income through the depression, something many larger roads could not do.

THE PORT JERVIS & MONTICELLO

The Monticello & Port Jervis Railway Company was organized on September 3, 1868, to build a railroad from the village of Port Jervis, in Orange County, to Monticello, in Sullivan county, a distance of 22 miles. The Erie Railway desired to obtain the business from Monticello, a thriving agricultural community, so aid was given in the loan of locomotives and rolling stock during the construction work. Building operations started late in 1869, through the sale of bonds and stock, the bonds being guaranteed by the various communities along the line, and for which they are still paying.

The line was run along the Neversink river to Huguenot, 4 miles north of Port Jervis, where it crossed the D. & H. canal and began the climb out of the valley. At Roses Point, a rocky bluff overlooking the Neversink river 3 miles north of Huguenot, and where the D. & H. canal crossed the river on an acqueduct, the railroad turned northwest and rapidly climbed out of the valley to the high table land on which Monticello is situated. Many cuts through the solid rock were necessary, and construction as a result was slow.

The road was completed and opened for service on January 9, 1871, a special train using motive power and cars borrowed from the Erie hauling some hundreds of Port Jervis residents to Monticello, where they were joined by an equal number of Monticello citizens who journeyed to Port Jervis to a mammoth banquet held at the Delaware House. This first train was hauled by Erie engine 14, Robert Kirkwood, engineer, Frank Garrity, conductor, with Mr. M. V. Heller in charge. Mr. Heller, freight agent of the Erie at Port Jervis, was appointed Manager of the M. & P. J., remaining with them until 1886 when he returned to the Erie. The fact that when he retired in 1906, his 52 years service with the Erie was rated as continuous, attests to the close relationship of the Erie with the Monticello road.

From the start, the road did not earn a profit, being barely able to make expenses. In addition, it was forced to buy two locomotives of its own in 1871, since the Erie required the return of those loaned to it, and in addition bought four passenger cars and a few freight cars. Since it could not even pay the interest on the bonded indebtedness, the road was foreclosed in 1875, being reorganized on July 8th of that year as the Port Jervis & Monticello Railroad Co., Mr. Heller continuing as General Manager. As business improved after the depression of 1873-75, the road managed to meet the bonded debt up to 1886, when a head-on collision at Oakland injured Jacob Eidel, a brakeman, precipitating a crisis in the affairs of the road. Mr. Eidel sued the company for $10,000 and obtained a judgment for $9,000. As there was no cash to pay it, the Hon. W. H. Clark of Middletown, N. Y. was appointed receiver, and he auctioned the road to the highest bidder at Port Jervis on November 6, 1886.

This auction created a ridiculous situation in that a local druggist became railroad president for a day, so to speak. It was brought about by spirited bidding at the auction by the stockholders of the road as well as persons representing financial interests from other communities, and Mr. George Lea, a druggist and public spirited citizen, entered into the bidding when it appeared that outsiders were to get the road, and when the stockholders withdrew to consult their backers, the receiver became tired of the delay and since Mr. Lea's bid at that time was the highest, knocked down the road to Mr. Lea for $20,100, subject to prior claims of the bondholders. After mature consideration of the size of the white elephant he had bought, Mr. Lea sold the road two days later for an unnamed price to Hon. H. R. Low of Middletown, who already controlled the right of way for a proposed extension of the N. Y. O. & W. from Fallsburg to Monticello.

Under Mr. Low the road was immediately reorganized on November 17, 1886 as the Port Jervis, Monticello & New York Railroad Co., and plans were immediately made for an extension to connect with the N. Y. O. & W. The Fallsburg-Monticello line was set aside in favor of a level route from Huguenot to Summitville, which involved no serious construction difficulties, whereas the Fallsburg route not only had considerable hilly country to cross, but was much longer to the main line than the Summitville extension. The new line diverged from the main line at Huguenot, paralleled the main line for 3 miles to Roses Point, but remained at river level 100 feet below the main line at that point, crossing the Neversink river near Cuddebackville and continuing up the valley of the Bashe's Kill through Westbrookeville and Wurtsboro to Summitville. With the completion of this line, a competing line between Port Jervis and New York was available, although this competition was for freight only, as the distance from Port Jervis to New York via Summitville was over 20 miles greater, making the running time too great for passenger competition.

The road was operated under the management of Mr. Benjamin Ryall, Mr. Heller having returned to the Erie when the reorganization took place, and soon after the extension was completed, efforts were made

to sell the road to the Erie, but there was not enough business to interest them. In 1895 Mr. A. E. Godeffroy bought all the stock in the road for the N. Y. O. & W., paying $5.00 a share for the 4000 shares outstanding. Due to failure to pay interest on the bonds, another reorganization was necessary on December 5, 1902, when the name of the road was changed to Port Jervis, Monticello & Summitville Railroad Co., and complete control was assumed by the N. Y. O. & W. In December 1903 a physical consolidation of rolling stock and power was made and thenceforth the N. Y. O. & W. operated the line as a branch of its own system although final lease agreements were not signed until July 1, 1905.

By this time the popularity of Sullivan county as a summer resort for New Yorkers was increasing rapidly, and passenger and freight traffic to Monticello in the summer months required five passenger trains and one freight per day each way from Summitville to Monticello. In order to shorten the distance from Summitville to Monticello, a cutoff was built from Roses Point directly down into the valley over a fill which bridged the D. & H. Canal and the highway, to a point on the Summitville line just south of the Neversink river bridge. The distance saved was 7.4 miles, and the section of the Monticello line from Huguenot to Roses Point was abandoned. Today this old roadbed forms the base for a three mile section of the new State Highway system.

The newly created junction was called Valley Junction, and thereafter trains were run through from Summitville to Monticello, with a shuttle train from Valley Junction to Port Jervis. Bus competition caused the abandonment of passenger service on the Port Jervis branch in 1930 and on the Summitville-Monticello line in 1935. A freight still makes the run daily except Sunday from Summitville to Port Jervis, returning to Valley Junction, thence to Monticello and return, and back to Summitville. Passengers for Monticello take the main line to Fallsburg, where it is a short taxi ride to Monticello.

MOTIVE POWER OF THE N. Y., O. & W.

The task of determining accurately just what locomotives were used by the New York & Oswego Midland prior to its reorganization as the N. Y. O. & W. has been made very difficult due to the fact that when the New Jersey Midland was separated from the N. Y. & O. M., the receivers divided the rolling stock and locomotives without leaving accurate and detailed records of the transaction. The oldest record of locomotives now in the possession of the N. Y. O. & W. is that of November 30, 1881, so that the data for the years previous to that time had to be obtained piecemeal.

The original order of locomotives probably was made with a total of 100 locomotives for both roads in mind. During the early construction period of the New Jersey Midland, that road bought five locomotives which they numbered 1 to 5, but in 1872 these locomotives were renumbered 70 to 74 so as to fit into the New York-Midland scheme of numbering, although they retained their N. J. M. initials on the tender.

The roster which follows is made up of three sections; the original

order of locomotives used on the road up to its reorganization as the N. Y. O. & W.; the group of locomotives purchased after that time up to the present date; and a small group of rebuilt and renumbered engines that unless listed separately would confuse anyone not thoroughly familiar with the motive power list.

LOCOMOTIVES USED IN 1869-1885 PERIOD

Nos.	*Name*	*Builder*	*Shop No.*	*Date*	*Type*	*Dimensions*		
1	Oswego	Rhode Island	101	1869	4-4-0	60″	17x22″	64,000
2	Madison	Rhode Island	102	1869	4-4-0	60″	17x22″	64,000
3	Chenango	Rhode Island	103	1869	4-4-0	60″	17x22″	64,000
4	Delaware	Rhode Island	109	1869	4-4-0	60″	17x22″	64,000
5	Sullivan	Rhode Island	110	1869	4-4-0	60″	17x22″	64,000
6	Orange	Rhode Island	120	1869	4-4-0	60″	17x22″	64,000
7	Otsego	Rhode Island	121	1869	4-4-0	60″	17x22″	64,000
8	Oneida	Rhode Island	124	1869	4-4-0	60″	17x22″	64,000
9	Ulster	Rhode Island	125	1869	4-4-0	60″	17x22″	64,000
10	Fulton	Rhode Island	126	1869	4-4-0	60″	17x20″	64,000
11	Easton	Rhode Island	131	1869	4-4-0	60″	17x20″	64,000
12	Oxford	Rhode Island	132	1869	4-4-0	60″	17x20″	64,000
13	Berlin	Rhode Island	134	1869	4-4-0	60″	14x22″	56,000
14	Norwich	Rhode Island	135	1869	4-4-0	60″	14x22″	56,000
15	DeRuyter	Rhode Island	185	1870	4-4-0	60″	17x22″	64,000
16	Delhi	Rhode Island	186	1870	4-4-0	60″	17x22″	64,000
17	Walton	Rhode Island	187	1870	4-4-0	60″	17x22″	64,000
18	Constantia	Rhode Island	188	1870	4-4-0	60″	17x22″	64,000
19	Stockbridge	Rhode Island	189	1870	2-6-0	54″	16x24″	72,000
20	Sidney	Rhode Island	190	1870	2-6-0	54″	16x24″	72,000
21	Ontario	Rhode Island	191	1870	0-4-0	52″	15x22″	54,000
22	Ellenville	Rhode Island	199	1870	0-4-0	52″	15x22″	54,000
23	Guilford	Rhode Island	297	1871	2-6-0	54″	17x24″	72,000
24	Smyrna	Rhode Island	298	1871	2-6-0	54″	17x24″	72,000
25	Plymouth	Rhode Island	299	1871	2-6-0	54″	16x24″	72,000
26	Volney	Rhode Island	300	1871	2-6-0	54″	16x24″	72,000
27	Hudson	Rhode Island	301	1871	0-4-0	52″	15x22″	54,000
28	Crawford	Rhode Island	308	1871	4-4-0	60″	14x22″	54,000
29	Sussex	Baldwin	2552	9-1871	4-4-0	61¾″	17x22″	72,000
30	Minisink	Baldwin	2551	9-1871	4-4-0	61¾″	17x22″	72,000
31	Neversink	Baldwin	2580	10-1871	4-4-0	61¾″	17x22″	72,000
32	Walkill	Baldwin	2579	10-1871	4-4-0	61¾″	17x22″	72,000
33	Franklin	Baldwin	2592	10-1871	2-6-0	54″	17x24″	74,000
34	Pompton	Baldwin	2614	11-1871	4-4-0	61¾″	17x22″	72,000
35	Shawangunk	Baldwin	2616	11-1871	4-4-0	61¾″	17x24″	72,000
36	Middletown	Baldwin	2618	11-1871	4-4-0	61¾″	17x22″	72,000
37	Sandburgh	Baldwin	2643	12-1871	4-4-0	61¾″	17x22″	72,000
38	Crawford	Baldwin	2646	12-1871	4-4-0	56¾″	12x22″	48,000
39	Mamakating	Baldwin	2666	1-1872	4-4-0	61¾″	17x24″	72,000
40	Liberty	Baldwin	2668	1-1872	4-4-0	61¾″	17x22″	72,000
41	Otselic	Baldwin	2692	2-1872	4-4-0	61¾″	17x24″	72,000
42	Pharsalia	Baldwin	2722	3-1872	4-4-0	61¾″	17x24″	72,000
43	Preston	Baldwin	2694	2-1872	2-6-0	54″	17x24″	74,000
44	McDonough	Baldwin	2724	3-1872	4-4-0	61¾″	17x24″	72,000
45	Fallsburgh	Baldwin	2782	4-1872	2-6-0	54″	17x24″	74,000
46	Paterson	Baldwin	2783	4-1872	0-4-0	54¾″	15x22″	68,000
47	Dundee	Baldwin	2815	5-1872	2-6-0	54″	17x24″	74,000
48	Jersey City	Baldwin	2840	6-1872	2-8-0	48″	20x24″	
49	Bloomingdale	Baldwin	2829	6-1872	2-6-0	54″	17x24″	74,000
50	Weehawken	Baldwin	2832	6-1872	2-6-0	54″	17x24″	74,000

Nos.	*Name*	*Builder*	*Shop No.*	*Date*	*Type*	*Dimensions*		
51	Newfoundland	Baldwin	2872	7-1872	2-6-0	54″	17x24″	74,000
52	Ogdensburgh	Baldwin	2929	9-1872	2-6-0	54″	17x24″	74,000
53	Hamburgh	Baldwin	2869	7-1872	2-8-0	48″	20x24″	
54	Wawayanda	Baldwin	2925	9-1872	4-4-0	61¾″	17x24″	72,000
55	Rockland	Baldwin	2964	10-1872	4-4-0	61¾″	17x24″	72,000
56	Wantage	Baldwin	2966	10-1872	4-4-0	61¾″	17x24″	72,000
57	Unionville	Baldwin	3009	11-1872	2-6-0	54″	17x24″	74,000
58	Hancock	Baldwin	3015	11-1872	2-6-0	54″	17x24″	74,000
59	Hamden	Baldwin	3083	1-1873	2-6-0	54″	17x24″	74,000
60	Unadilla	Baldwin	3082	1-1873	2-6-0	54″	17x24″	74,000
61	Monticello	Baldwin	3096	1-1873	2-6-0	54″	17x24″	74,000
62	Wawarsing	Baldwin	3097	1-1873	2-6-0	54″	17x24″	74,000
63	Callicoon	Baldwin	3131	2-1873	2-6-0	54″	17x24″	74,000
64	Lebanon	Baldwin	3130	2-1873	2-6-0	54″	17x24″	74,000
68	Tompkins	Rhode Island	431	9-1872	2-6-0	See 1st #79		
69	Rip Van Winkle	Rogers		1872	4-4-0	60″	16x24″	
75		McKay & Aldus		10-1872	4-4-0	56″	16x24″	60,000
76		McKay & Aldus		10-1872	4-4-0	66″	16x24″	60,000
77		McKay & Aldus		12-1872	4-4-0	66″	16x22″	60,000
78	Courtland	Rhode Island	430	9-1872	2-6-0	54″	17x24″	72,000
79,	1st—Tompkins	Rhode Island	431	9-1872	2-6-0	54″	17x24″	72,000
79,	2nd—Ramapo	Rogers		1872	4-4-0	54″	16x24″	
80	Lansing	Rhode Island	432	10-1872	4-4-0	56″	17x24″	64,000
81	Genoa	Rhode Island	443	10-1872	4-4-0	56″	17x24″	64,000
82	Venice	Rhode Island	444	10-1872	4-4-0	56″	17x24″	64,000
85	Norwich	Rhode Island	531	1873	4-4-0	56″	17x24″	64,000
86	Scipio	Rhode Island	532	1873	4-4-0	56″	17x24″	64,000
87	Campgaw	Rhode Island	533	1873	4-4-0	56″	17x24″	64,000
88	Stockholm	Rhode Island	534	1873	4-4-0	56″	17x24″	64,000
89	Oakland	Rhode Island	535	1873	4-4-0	56″	17x24″	64,000
90	Wanague	Rhode Island	536	1873	4-4-0	56″	17x24″	64,000
91	Watchung	Rhode Island	537	1873	2-6-0	48″	18x26″	74,000
92	Bloomfield	Rhode Island	538	1873	2-6-0	48″	18x26″	74,000
93	Kearney	Rhode Island	539	1873	2-6-0	48″	18x26″	74,000
94	Newark	Rhode Island	540	1873	2-6-0	48″	18x26″	74,000
95	Mountain View	Rhode Island	541	1873	2-6-0	48″	18x26″	74,000
96	Belleville	Rhode Island	542	1873	2-6-0	48″	18x26″	74,000
97	Cliffsdale	Rhode Island	543	1873	2-6-0	48″	18x26″	74,000
98	Ridgewood	Rhode Island	544	1873	2-6-0	48″	18x26″	74,000
99	Riverdale	Rhode Island	545	1873	2-6-0	48″	18x26″	74,000
100	Truxton	Rhode Island	546	1873	2-6-0	48″	18x26″	74,000
101	Cuyler	Rhode Island	547	1873	2-6-0	48″	18x26″	74,000

The names of all the engines were selected from the towns or counties through which the road passed, and it is interesting to note that Engines 14 and 85 were both named Norwich, while Engines 28 and 38 had the name Crawford, a mixup that was probably never corrected as the use of names was abolished soon after the engines were delivered. Engine 89 was not shipped from the factory, but was loaned to the Boston & Providence for a short time after which it was sold to the Providence & Worcester. In 1879 it was rebuilt with new boiler for soft coal and renamed Geo. A. Leete, No. 30. Rightfully this engine should not be listed in the Midland roster.

An item in a Norwich, N. Y. newspaper Feb. 12, 1874 stated that "Six of the heaviest coal burning locomotives of the Midland left last week for the manufactory at Providence, R. I. and others are to follow. They have not been paid for". These engines were Nos. 85, 86, 87, 88

and 90, but instead of being returned to the factory, they were turned over to the New Jersey Midland receivers, where they were numbered 80 to 84, later renumbered as N. Y. S. & W. Nos. 10 to 14.

Engines 69 and the second 79, the two Rogers engines, were also transferred to the New Jersey Midland in 1874, No. 69 being renumbered 85 on the N. J. M. It was later sold to some other road. The 1881 roster of the N. Y. O. & W. shows Engines 7, 13, 48 and 53 missing, besides the 85-90 group, so it is possible that some of these engines were also turned over to the N. J. M. During the time the New Jersey Midland was operated as a unit of the N. Y. & O. M., its motive power was as follows:

1st No.	2nd No.	Name	Builder	Shop No.	Date	Type	Dimensions
1	70	Passaic	Rogers		1870	4-4-0	66" 17x24"
2	71	C. A. Wortendyke	Rogers		1871	4-4-0	66" 17x24"
3	72	Pequannock	Rogers		1871	4-4-0	54" 16x24"
4	73	Deckertown	Rogers		1871	4-4-0	54" 16x24"
5	74	Charlotteburgh	Rogers		1871	4-4-0	54" 16x24"

Following the receivership, the receivers of the N. J. M. ordered five additional locomotives from Rhode Island which were shipped directly to the N. J. M. They were as follows:

Nos.	Name	Builder	Shop No.	Date	Type	Dimensions		
75	Weehawken	Rhode Island	548	1873	2-6-0	48"	18x26"	74,000
76	Hackensack	Rhode Island	549	1874	4-4-0			
77	Paterson	Rhode Island	550	1874	4-4-0			
78	Pompton	Rhode Island	551	1874	4-4-0			
79	Wyckoff	Rhode Island	552	1874	2-6-0			

These five engines were later renumbered N. Y. S. & W. Nos. 5 to 9 inclusive. Thus after the separation of the road, the New Jersey Midland had 15 engines numbered from 70 to 85, with the final disposal of the N. Y. & O. M. 79, the Ramapo, not determined. Engines 70 to 73 were later renumbered N. Y. S. & W. Nos. 1 to 4, with No. 74, the Charlotteburgh disappearing off the N. J. M. roster between 1874 and 1880.

There were no locomotives received by the N. Y. O. & W. with road numbers 65, 66, 67, 68, 83 or 84. The first 78, the Tompkins, was renumbered 68 almost immediately after it was received due to the arrival of the Rogers 4-4-0 engine assigned No. 79. In 1887, when the Brooks order of 9 locomotives bearing the road numbers 70 to 78 was completed, Rhode Island mogul 78, originally the Courtland, was renumbered 67 for a short time, but it disappeared from any available records after the year 1888. Mr. A. L. Weeden, of Norwich, N. Y., veteran N. Y. O. & W. engineer, through whose kind co-operation much of the data for this history has been compiled, kept a diary in his younger days, and he can find frequent mention of having fired mogul engine 67 in the years 1887 and 1888 but not thereafter. As the two 4-4-0 Rome engines, Nos. 67 and 68 were received in 1889, the two moguls 67 and 68 were probably disposed of at that time or else again renumbered. Mr. Weeden finds mention of engine 66 recorded in the Norwich register of April 10, 1883, as going north, light. Also on the Randallsville register he finds engine 65 going north light to Oswego on April 2, 1883. As the 1881 roster does not show engines bearing these numbers, they must have been renumbered

from other mogul groups. All four of these renumbered engines disappeared from the road by the time the new engines bearing these numbers 66-69 were received in 1889.

Between 1874 and 1886 no additional locomotives were acquired by the road, but starting in 1886, new locomotives were purchased and older ones rebuilt, the latter largely at the New York Locomotive Works, Rome, New York. The following table gives the data on locomotives bought new or second hand from 1886 to the present time and an additional table shows these locomotives rebuilt, or renumbered when bought second hand.

LOCOMOTIVES ADDED AFTER 1885

*Indicates Mother Hubbard Type

Nos.	*Builder*	*Shop Nos.*	*Date*	*Type*	*Dimensions*				*Class*
1	Cooke	2325	1895	4-4-0*	68″	17x24″	80000		B
2	Cooke	2339	1896	4-4-0*	68″	17x24″	80000		B
20– 21	Cooke	2476, 2494	1899	4-4-0	68″	18x28″	91000		A
22	Cooke	41333	1907	4-4-0	68″	18x28″	94000		A
23– 24	Cooke	44800–01	1908	4-4-0	68″	18x28″	94000		A
30– 33	Cooke	28586–89	1903	2-6-0	63″	20x26″	143000		I
34– 39	Cooke	28590–95	1904	2-6-0	63″	20x26″	143000		I
40– 44	Baldwin	30636–38 30673, 30730	1907	2-6-0	63″	20x26″	149000		I
50– 52	Cooke	47071–73	1910	0-6-0*	51″	20½x26″	156000		L
53– 56	Cooke	49710–11 50184–85	1911	0-6-0*	51″	20½x26″	156000		L
66– 69	Rome	534–535 456– 457	1889	4-4-0	69″	18x24″	80000		H
70– 74	Brooks	1120–1124	1886	4-4-0	69″	18x24″	82000		G
75– 78	Brooks	1178, 1188 1189–1190	1887	4-4-0	69″	18x24″	82000		G
		Nos. 80-89 were purchased from the West Shore R. R.							
80	Baldwin	7044	1883	2-8-0	50″	20x24″	102000	WS #126	O
81– 82	Baldwin	7022, 7074	1883	2-8-0	50″	20x24″	102000	131-132	O
83	Baldwin	7091	1883	2-8-0	50″	20x24″	102000	135	O
84	Baldwin	7068	1883	2-8-0	50″	20x24″	102000	130	O
85	Baldwin	7131	1884	2-8-0	50″	20x24″	102000	143	O
86	Baldwin	7115	1884	2-8-0	50″	20x24″	102000	140	O
87	Baldwin	7036	1883	2-8-0	50″	20x24″	102000	125	O
88	Baldwin	7031	1883	2-8-0	50″	20x24″	102000	124	O
89	Baldwin	7155	1884	2-8-0	50″	20x24″	102000	144	O
90(89)	Dickson	?	1876	2-8-0	Ex S. V. #2				S
91– 92	Rome	323– 324	1888	2-8-0	50″	20x24″	105000		N
104–111	Rome	458– 459 562– 567	1889	2-6-0	62″	19x24″	112000		M
126–136	Dickson	763– 772 709	1890	2-6-0*	56″	19x24″	103000		R
137–138	Dickson	819– 820	1892	2-6-0	50″	18x24″	98000		Q
139–142	Dickson	897 904– 906	1893	2-6-0*	62″	19x24″	119000		T
151–162	Dickson	773– 784	1890	2-8-0*	50″	20x24″	116000		S
163–165	Dickson	785– 787	1891	2-8-0*	50″	20x24″	116000		S
166–180	Dickson	873– 887	1892	2-8-0*	50″	20x24″	116000		S
181–186	Dickson	898– 903	1893	2-8-0*	50″	20x24″	116000		S
187–188	Dickson	907– 808 Rec'd	1893 1894	2-8-0*	50″	20x24″	116000		S

Nos.	Builder	Shop Nos.	Date	Type	Dimensions			Class
190				2-8-0*	Rebuilt Rome		1907	S
191–192	Dickson	911– 912 Rec'd 1896	1893	2-8-0*	50″	20x24″	116000	
201–204	Cooke	2509 2566–2568	1900	2-8-0*	55″	21x32″	178000	P
205–210	Cooke	2646– 51	1901	2-8-0*	55″	21x32″	178000	P
211–214	Cooke	2710– 13	1901	2-8-0	55″	21x32″	178000	P
215–217	Cooke	26242– 4	1902	2-8-0	55″	21x32″	178000	P
218–220	Cooke	29286– 8	1903	2-8-0	55″	21x32″	178000	P
225–228	Brooks	50035– 38	1911	4-6-0	69″	21x26″	134000	E
143–148–248	Cooke	2645	1901	2-6-0*	69″	19½x28″	138000	U
144–149–249	Dickson	1218	1901	2-6-0*	69″	19½x28″	138000	U
146–246	Cooke	27493	1903	2-6-0	69″	19½x28″	136000	U
147–247	Cooke	27492	1903	2-6-0	69″	19½x28″	138000	U
240–242	Cooke	30446–8	1905	2-6-0	69″	19½x28″	138000	U
243–245	Cooke	29283–5	1904	2-6-0	69″	19½x28″	138000	U
250	Cooke	30449	1905	2-6-0	69″	19½x28″	138000	U
251–256	Cooke	38971–6	1907	2-6-0	69″	19½x28″	138000	U
271–274	Cooke	45420–3	1908	2-6-0*	63″	20x28″	150000	V
275–280	Cooke	45660–5	1908	2-6-0	63″	20x28″	150000	V
281–284	Cooke	45841–4	1909	2-6-0	63″	20x28″	150000	V
285	Cooke	45424	1908	2-6-0	63″	20x28″	150000	V
301–306	Cooke	48137–42	1910	2-8-0	55″	21x32″	182000	W
307–314	Cooke	48355–63	1910	2-8-0	55″	21x32″	182000	W
315–320	Cooke	49410–15	1911	2-8-0	55″	21x32″	182000	W
321–326	Cooke	49704–09	1911	2-8-0	55″	21x32″	182000	W
351–362	Schen.	55268–79	1915	2-10-2	57″	28x32″	293000	X
401–404	Schen.	63254–57	1922	4-8-2	69″	27x28″	208000	Y
405–410	Schen.	64735–40	1923	4-8-2	69″	27x28″	208000	Y
451–460	Schen.	67986–95	1929	4-8-2	69″	27x30″	239500	Y-2

Engine 402 is Class Y-1 with booster.

ENGINES REBUILT OR RENUMBERED

Nos.	Orig. No.	Date Rebuilt	Where Rebuilt	Type	Class
3	76 (Brooks)	1899	Cooke	4-4-0*	B
4	78 (Brooks)	1898	Norwich Shops	4-4-0	B
10– 11	Bald. 1872	1896	Cooke	4-4-0	C
12	Bald. 1872	1897	Dickson	4-4-0	C
13	Bald. 1872	1897	Cooke	4-4-0	C
14– 16	Bald. 1872	1898	Dickson & Cooke	4-4-0	C
23	27	1890	Renumbered	0-4-0	
25– 27	80–82	1890	New York Loco. Wks.	4-4-0	D
102–103	91–92	——	Renumbered in 1888	2-6-0	K
115–117	Bald. 1872	1898	Cooke	2-6-0*	J
118–121	Bald. 1873	1902	New York Loco. Wks.	2-6-0	J
189	90–89	1899	Cooke	2-8-0*	S
7	P. J. M. & S. 7	1905	(Purchased 2nd hand)	4-4-0	F

Correspondence with retired employees of the New York Locomotive Works indicates that in the fall of 1887, the N. Y. O. & W. sold 11 of the Rhode Island engines to the New York Locomotive Works, where they were rebuilt with new headlights, pilots, bushings, new cab curtains, flues, tires turned, air brakes added and a new coat of paint (wornout boiler not mentioned). They were then sold to small roads in the south, although No. 4 was rented for a few years to the Carthage & Adirondack

as No. 4, the road having only engines numbered 1 and 2. Nos. 9 and 26 were fitted with balloon stacks, and sold to the Georgetown & Western, named Winyaw and Waccamaw, on January 2, 1889. Several of the rebuilt engines left the works without name or road identification.

In their place, the New York Locomotive Works built the handsome series of engines comprising Nos. 66-69, Type 4-4-0, Nos. 91-92, Type 2-8-0 and Nos. 104-112, Type 2-6-0. These engines were all somewhat similar in appearance and when new had capped stacks. In addition to these engines, the road received nine 4-4-0s from the Brooks works, numbered 70-78. The 2-6-0s numbered from 91 to 101 were extensively rebuilt, Engines 91 and 92 being renumbered 102 and 103 to make room for the new Rome 2-8-0s. Some of the rebuilt Rhode Island 2-6-0s survived until 1915, Engine 95 being used as a switcher in the Norwich yards up to that time, finally being sold to the Southern Iron & Equipment Co.

By 1895 so many of the 4-4-0s had been scrapped that two new 4-4-0s, anthracite coal burners with wide fireboxes, of the Mother Hubbard type were bought new from Cooke. These were engines 1 and 2. They proved to be so satisfactory that others of the older 4-4-0 groups were rebuilt, including Engines 76 and 78 of the Brooks 1887 series, and seven of the Baldwin 1872 series. These engines were essentially alike, although Engines 1-4 were heavier than 10-16, the latter having the dimensions 56″ 17x24″ 102,700 total weight. The best of the remaining Baldwin 2-6-0s were likewise rebuilt into Mother Hubbard anthracite coal burners, and were numbered 115-121. All these rebuilt engines were retired from service by 1917. Brooks 4-4-0s 71 to 75, and 77 were also rebuilt, but retained their original appearance. Engine 70 was blown up shortly after 1900 and was never rebuilt.

Engine 38 of the Baldwin 1872 group was the first inspection engine, with a divided stack so as not to obscure the large plate glass front window. Later the cab was transferred to Engine 28 of the Rhode Island group, which became the second inspection engine. When No. 28 was retired from service in 1901 the wooden cab, already once rebuilt after a fire which wrecked it, was transferred from the 28 to the 26, ex 81, and this engine thus became the third inspection engine. In later years the cab was steel sheathed and as late as 1934 this engine stood in a fearfully dilapidated condition on the scrap track at Middletown, the last survivor of the original group of engines bought from the Midland.

Engine 90 was bought second hand from the Schoharie Valley R. R., some time in 1887, being their No. 2, and was at that time a single cab 2-8-0 of a type peculiar to the D. L. & W., which had furnished the Scoharie Valley with its power. This engine was numbered 89 when received, was renumbered 90 on October 2, 1887, and was again renumbered 189 and rebuilt at the Cooke works in May 1899, so as to be like the "8" class Dicksons. It differed from them only in having the flat-topped Cooke domes of that period, like Engines 11 and 16.

In 1901 the company bought Engines 143 and 144 from Cooke and Dickson respectively. A few months later both engines were wrecked in a head-on collision, and were built and renumbered 148 and 149. In the meantime, in 1903, two additional engines of this type were bought

from Cooke and numbered 146 and 147. Inspection of the roster would seem to indicate that Engines 243-245 bought from Cooke in 1904 might have been first numbered 143-145, as the renumbering to the 200 series did not take place until 1905, but apparently this was not the case. Engine 190 was bought second hand from the Erie in 1907 and was rebuilt at the New York Locomotive Works into an "S" class engine, although in appearance it was different from the Dicksons. Various of the Cooke 2-6-0s have been rebuilt into 4-6-0s in recent years. Today the only survivor of the group of locomotives which operated on the road prior to 1900 is the 157, still switching at Middletown. The 24, sole remaining 4-4-0, was sold to the Middletown & Unionville R. R. in July, 1935, as their No. 6.

LOCOMOTIVES OF THE PORT JERVIS & MONTICELLO RAILROAD

No.	*Builder*	*Date*	*Type*	*Dimensions*		
1-2	Danforth	1868	4-4-0			
3	Danforth	1871	4-4-0			
4-#1	Baldwin	1888	2-6-0			
4-#2	Baldwin	1889	2-6-0			
7-	Baldwin	1871	4-4-0	56″	17x24″	54,000
27-	Rhode Island	1872	4-4-0	56″	17x24″	56,000

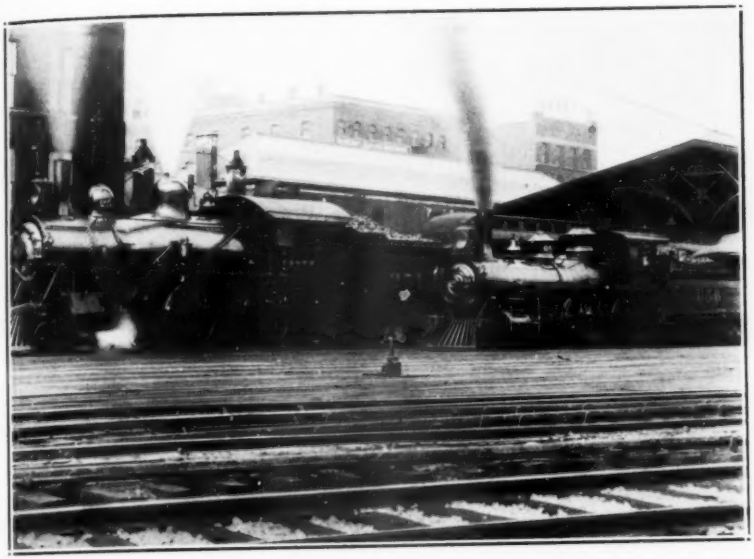
Engines 1 and 2 were bought second hand in 1872 through the agency of the Erie Railway. No records exist as to their original owners, other than that they were bought through a Paterson, N. J. locomotive works. My grandfather, Martin V. Heller, Manager of the road, rode one of these engines from Paterson to Port Jervis at the time they were delivered. They had a large amount of brass ornamental work which was later stripped off. Mr. William Zock, retired N. Y. O. & W. engineer who started as a fireman on the P. J. M. & N. Y., said these engines had very small cylinders, and were much lighter than Engines 3 or 7.

In 1876, after the road was first reorganized, another engine was purchased from the Morrix & Essex R. R., it having been No. 88, the Ridgwood, on that road, they in turn having bought it second hand from the Ohio & Mississippi R. R., who bought it new from Danforth in 1871. This engine was numbered 3, and with the 1 and 2 served the road until 1887 when an additional locomotive was needed for the construction work on the extension to Summitville. A new 2-6-0 was ordered from Baldwin, numbered 4, and was delivered late in 1888. Considerable trouble was had with the engine due to the light track on the extension, and it finally became derailed and mired in the mud in a cut near Haven, N. Y., after the storm of June 1, 1889 (of Johnstown Flood fame) and it was three weeks before the engine could be put back on the tracks again, as the road had very little equipment for wrecking operations. Arrangements were then made with Baldwin to trade the mogul for a smaller one, this being done in 1889. Both No. 4s were similar in design, the only difference being that the second 4 weighed about 10 tons less than First No. 4.

In 1893, Engine No. 1 was sold for scrap, so another 4-4-0 was bought from Chas. Hames & Bros., Paterson, N. J., they having bought

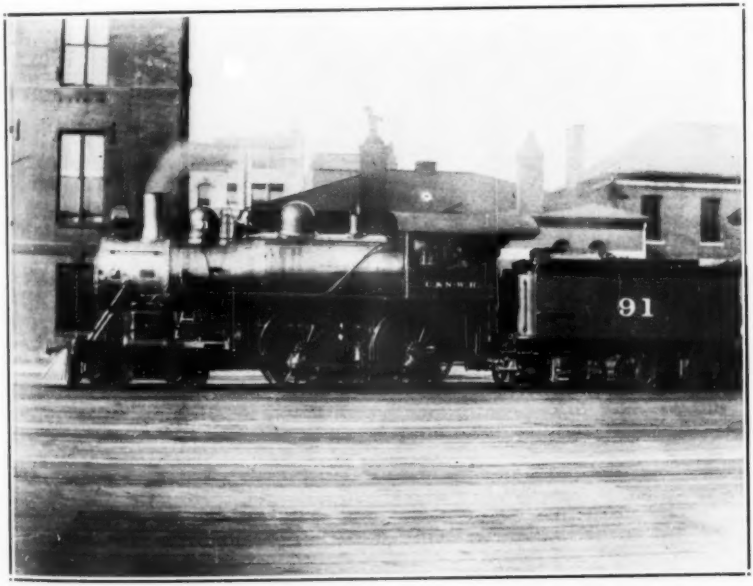
it from the Pennsylvania. This engine, No. 7, was typical of the Pennsylvania 4-4-0s of the 1870 era, with narrow, extended smokebox. When the N. Y. O. & W. took over stock control in 1895 after Mr. Godeffroy purchased the common stock, Engine 2 was sold for junk, and in September 1899, N. Y. O. & W. Engine 27 was bought and operated as P. J. M. & N. Y. 27. It was returned to the N. Y. O. & W., however, in June 1900. After physical operation of the road was assumed by the N. Y. O. & W., Engine 3 of the P. J. M. & S. was informally renumbered 8 by the crews operating it, as the N. Y. O. & W. had an Engine 3 occasionally operating out of Summitville. When the road was taken over in 1905, 3 was sold for junk, No. 4 was sold to a second hand dealer, and No. 7 was transferred to the N. Y. O. & W. roster as their No. 7. The latter engine was used on its old run to Monticello and Port Jervis for a few years and then was assigned to haul the pay car on the main line. In 1915 it was retired and soon thereafter scrapped.

The writer wishes to thank Dr. F. W. Best of Port Jervis, N. Y. and Mr. A. L. Weeden of Norwich, N. Y., for the many hours they spent in the public libraries compiling the historical data for both roads; Mr. K. E. Schlachter for photographs, and Mr. B. P. Flory, Supt. of Motive Power of the N. Y. O. & W., Mr. George P. Becker and Mr. W. A. Lucas for motive power data.



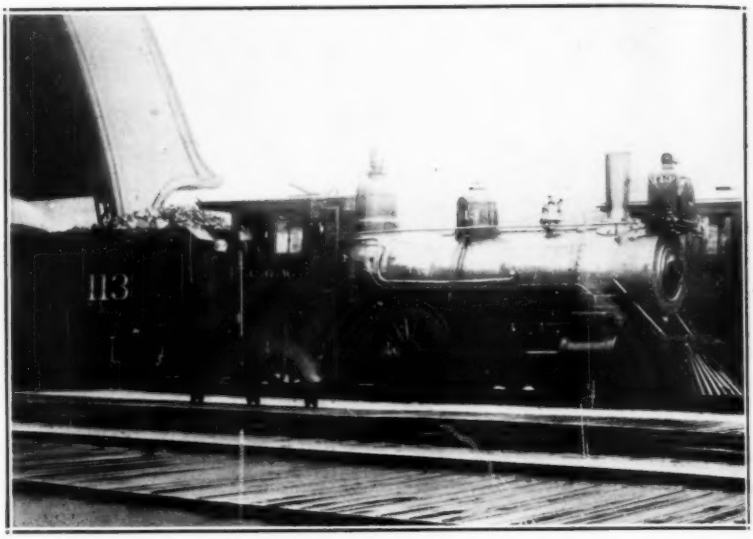
Courtesy of J. W. Merrill.

C. & N. W. 251 & 656 at Wells & Kinzie Sts. Station



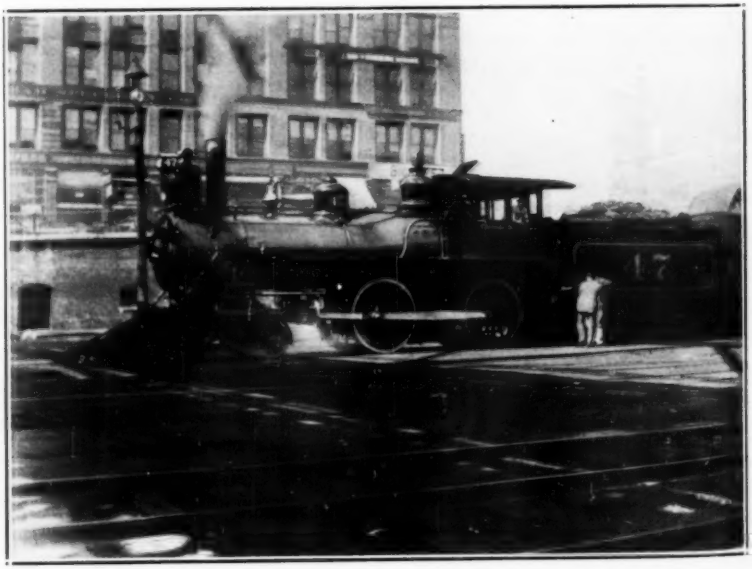
Courtesy of J. W. Merrill.

C. & N. W. #91 at Wells & Kinzie Sts. Station.



Courtesy of J. W. Merrill.

C. G. W. #113 at the Grand Central Station.



Courtesy of J. W. Merrill.

C. & A. #47 at Union Station.

Chicago's Old Depots

By Arthur Curran

AS THE greatest railroad center on earth, Chicago has fascinated all who realize what railroads have done toward the development of the United States and what they CAN do if treated fairly in the future.

The vast trackage in and near Chicago, including yards and approaches to stations, would require volumes for adequate description. Even the stations, themselves, can be described only in the most sketchy manner within the necessary limitations of the present article.

The most modern of these stations are the Union, at Canal Street and Jackson Boulevard, and the Chicago & North Western at Madison and Canal Streets. The former accommodates the Alton, the Burlington, the Pennsylvania and the Milwaukee. The latter serves the C. & N. W. only.

The present Union Station replaced an older structure of the same name and serving the same railroads. The C. & N. W. Station replaced the famous old shed at Wells and Kinzie Streets.

The Central Station, over near the lake front, has been headquarters of the Illinois Central for many years; serving, also, the Michigan Central, the Big Four and, more recently, the Chesapeake & Ohio. A very lively suburban service, handled for years by a variety of steam locomotives, and more recently by multiple-unit electric trains, added much to the whirlpool of activity for which the lake front was noted. Those who recall the World's Columbian Exposition of 1893 will agree to this and, possibly, add a few remarks of their own on the wonderful handling of traffic.

The LaSalle Street Station, at Van Buren, LaSalle and Sherman Streets, replaced, about a generation ago, an older structure on the same site. Through the courtesy of Mr. J. M. Blanchard, Librarian, The Traffic Club of Chicago, I am able to offer the following excerpt from the "History of Chicago," Vol. I:

According to *The Herald* of October 21st, 1855, the depot of the two roads then known as the Michigan Southern and the Rock Island, was projected with a frontage on Van Buren Street. *The Herald's* description of the building was substantially as follows: "It will be three hundred and fifty five feet in length, exclusive of offices at the end of the building. The span of the roof from the side walls is one hundred and sixteen feet. It will have but a single support in the entire building, as it will be constructed on the principle of Howe's patent truss. The ventilators will be in the roof. The height of the walls will be twenty-two feet, while from the floor to the center of the arch will be forty-two feet. The roof alone will cost $23,000.00."

This building was used until destroyed by the fire of 1871. In 1902, the author noted some re-building in progress. What had been done, prior to that date, as regards replacing the loss in the famous fire, he

cannot say positively. The train-shed, still used, was standing in 1902—just 33 years or a generation ago. The New York Central is the "Michigan Southern" of today, the Rock Island is still there, and the Nickel Plate is the "newcomer"—if a fifty year old road can be called "New."

As adequate reference to the Galena & Chicago Union was made in a previous bulletin, it is unnecessary to discuss it further here.

The Chicago & North Western of Marvin Hughitt's day is recalled by many of us with feelings of the warmest admiration and highest regard. The Schenectady 4-4-0 engines and the light yellow passenger cars with their green letter-boards live in the memories of those to whom this fine old road represented the finest traditions of the business. That its vitality and progressiveness are strong to this day is attested by the "400" and supported by many other achievements.

The station at Wells and Kinzie Streets succeeded several wooden structures which, at one time or another, had occupied sites in the vicinity. It was opened in 1882 and served the road for about 30 years.

The present station was built to offer a more convenient location. Advantage was taken of improvements in methods of construction to make this terminal one of the best in the country. When built, it certainly was the finest in Chicago, and superior to most others in the country. With its elevated approaches, it constitutes an ideal terminal for the purpose intended. In view of this and of the nearby Union Station, it is difficult to understand the proposals for a huge new union depot on the lake front. It is to be hoped that wiser counsels will prevail and that such an unnecessary extravagance will be averted. There are other things much more important than the provision of a monster that nobody needs or wants to pay for.

The Dearborn Station, at Dearborn and Polk Streets, and the Grand Central Station, at Wells and Harrison Streets, complete the list of Chicago depots. The former serves the Chicago & Eastern Illinois, the Erie, the Grand Trunk, the Monon, the Santa Fe and the Wabash. The latter accommodates the Baltimore & Ohio, the Chicago Great Western, the Pere Marquette and the Soo Line. Both stations have iron sheds; the former of the gable type and the latter of the arch type. Such train-sheds are of designs popular half a century or more ago.

As both of these terminals are near LaSalle Street Station, the substitution of one structure for all would be feasible and, possibly, even desirable. But that is for the future to decide.

Meanwhile, they typify the Chicago of an earlier day, which gave the world "skyscrapers," Pullman cars, scientific meat shipment, the biggest department store in the world and the mail order business raised to the Nth power! This makes no mention of Eugene Field, who became famous there, and of many others who added lustre to their city and state. The man who never has visited Chicago has missed one of the most significant sights of the American nation.

Years ago, in the East, "Chicago Limited" was a name to conjure with! It was a thrill even to say the words! What boy, of those days, did not get a "kick" out of the stentorian announcement that such a train was about to leave? All subsequent modes of travel seem petty by comparison, and of no account at all!

There have been some changes in the tenancy of stations during the years that some of us can recall, but most of the roads mentioned herein are "doing business at the same old stand." There may have been changes, also, in some of the terminal companies who managed stations and supplied switch engines to do the shifting for their tenants.

If any member of the Railway Locomotive Historical Society has been able to dig up more facts than the author has, he would do well to offer them for publication. This is a big subject, and the present article is intended more to attract those interested than to make any pretensions of comprehensiveness.

With regard to illustrations: As suitable pictures of the stations are not available at the moment, it was thought best to use photographs of locomotives. These are of classes popular 35 or 40 years ago on various railroads entering Chicago. This selection is a compromise between extremely old times and the strictly modern era; and, accordingly, may be expected to make a wider appeal to members and others than any other. The photos were taken at Chicago stations by Mr. John W. Merrill, through whose courtesy they are reproduced.

The view of C. & N. W. Nos. 251 and 656 is of interest as showing two of the Schenectady classes at Wells and Kinzie Streets Station. A portion of the train-shed and the adjacent buildings add "atmosphere."

The picture of C. & N. W. No. 91 is of value as showing one of the famous fast mail Schenectady engines at the same station.

Chicago Great Western No. 113—evidently a Cooke—with her gable-roof cab and other old-time features is a prize, also. The view includes part of the arch at Grand Central Station and an engine of the Chicago Terminal Transfer R. R. Co. in the background. This latter company, by the way, furnished switch engines at that station, and had other types, too.

Chicago & Alton No. 47 is shown at Union Station. Her paneled cab and old standard lettering and striping are of interest today; as are, also, the buildings included in the view.

It would be possible to fill the bulletin with such pictures, but there are practical reasons why this cannot be done. Those selected are the best, for the purpose, which have come to the author's desk. Incidentally, that desk has received, at one time or another, a deluge of material that not even the greatest genius of all time could use for any purpose whatever.

As for attempting to trace the history of every one of the stations in Chicago from their start to the present day: Such a work would run serially until most of the members now on the list had gone to some other world and picked another hobby!

As to whether station office-buildings were constructed of brick or of Joliet stone is a matter of more interest to architects than to railroad men. Both materials were used in Chicago; and both, doubtless, had their merits. It is likely, however, that the boys of 50 years ago were more interested in what went on under the iron sheds and in the yards than in what occurred upstairs. Quite likely, also, that rule holds good today.

The Tonawanda Valley Lines

By Captain Winfield W. Robinson

THE Tonawanda Creek has its source in the high hills in the southern part of Wyoming County in New York State. From there it flows northerly to the city of Batavia, about thirty-five miles; thence in a general northwesterly direction through the counties of Genesee and Erie about fifty miles, emptying into the Niagara River at the cities of Tonawanda and North Tonawanda and forming the dividing line between the counties of Erie and Niagara.

The Indian name of the creek was Tanawunda, meaning swift water. The valley is beautiful and fertile and was originally inhabited by the Seneca Indians, the remander of which tribe now lives on the government's Tonawanda Indian Reservation on the banks of the creek in the Northwesterly corner of Genesee County.

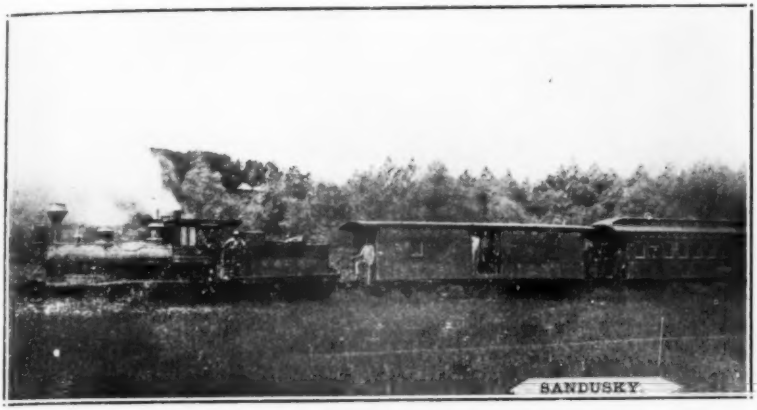
Following the War of the American Revolution, attracted by the valley's fertility, settlers in large numbers came from New England and the population increased rapidly. At the time of the War of 1812 there were numerous thriving villages in this region. It is a country of rolling hills, many small streams and brooks fed by pure springs and particularly well suited to general agriculture and dairying.

In the study of the railroad lines herein set forth we will confine ourselves to that portion of the valley extending southerly from the city of Batavia which in early times was the largest community in Western New York and the headquarters of the Holland Land Company, a developing organization from Manhattan Island which had secured from the newly formed United States Government a grant of all the lands west of Onondaga.

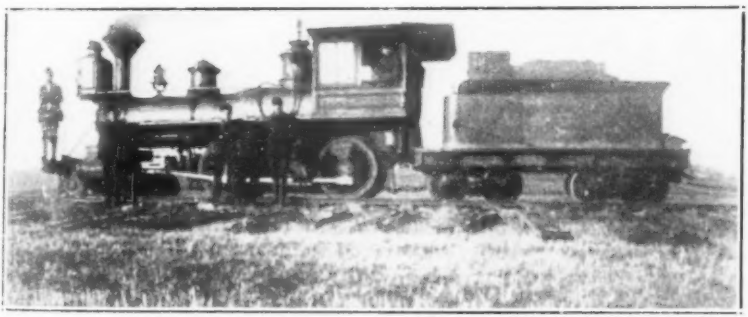
The first railroad into Western New York was the Rochester and Buffalo, later a part of the New York Central, which was opened to Batavia in 1837 and from Batavia to Buffalo, via Attica, in 1843. Apparently railroad interests thought the next best move was a line to tap the rich region of the Tonawanda Valley, for it was at this time that the first corporation was organized to construct such a line.

In 1843 a survey was made for a line to be known as the TONAWANDA VALLEY AND LOCKPORT RAILROAD, to commence at a connection with the proposed Washington Railroad (now the Buffalo Division of the Pennsylvania Railroad) at West Arcade, running northerly, following Tonawanda Creek, to the then hamlet of Lockport in Niagara County, the intention being to have rail connections at Attica and Batavia and a water connection at Lockport, the Erie Canal having been completed in 1825. As far as can be learned, nothing was ever done toward constructing this railroad.

In the early part of 1852 a route was surveyed for the ATTICA AND ALLEGANY VALLEY RAILROAD, to commence in the village of Attica at a connection with the Attica and Batavia branch of the New York Central and the newly constructed Buffalo and Hornellsville branch

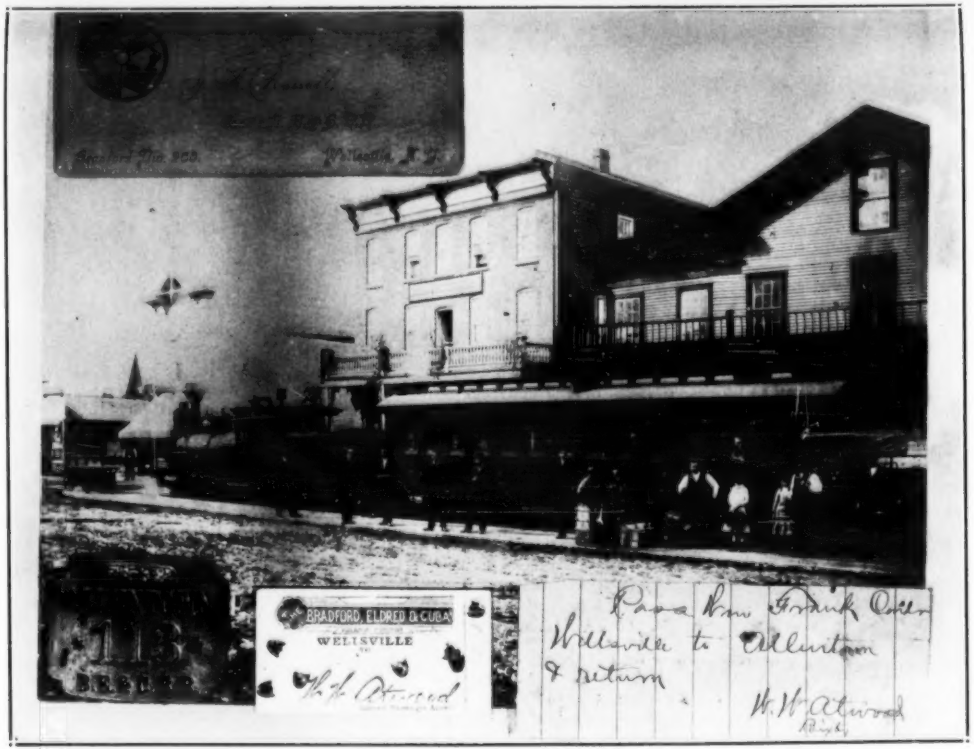


T. V. & C. R. R. train taken near Rushford, N. Y. 1882-1886.

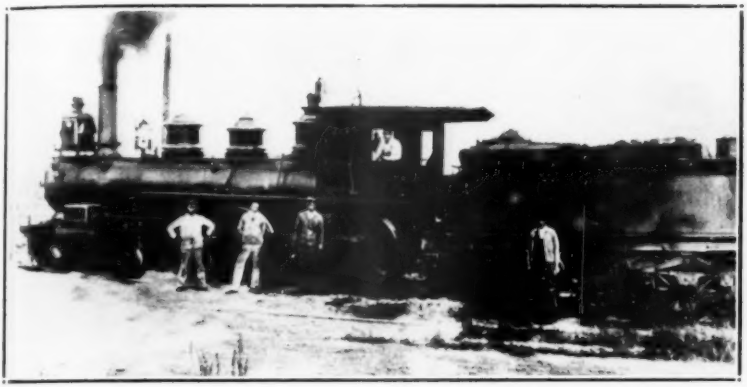


Tonawanda Valley & Cuba R. R. Locomotive 21.

This engine was originally built for display and advertising purposes at the International Exhibition of the U. S. Centennial Commission at Phila., 1876. All movable parts inside the cab were silver plated.

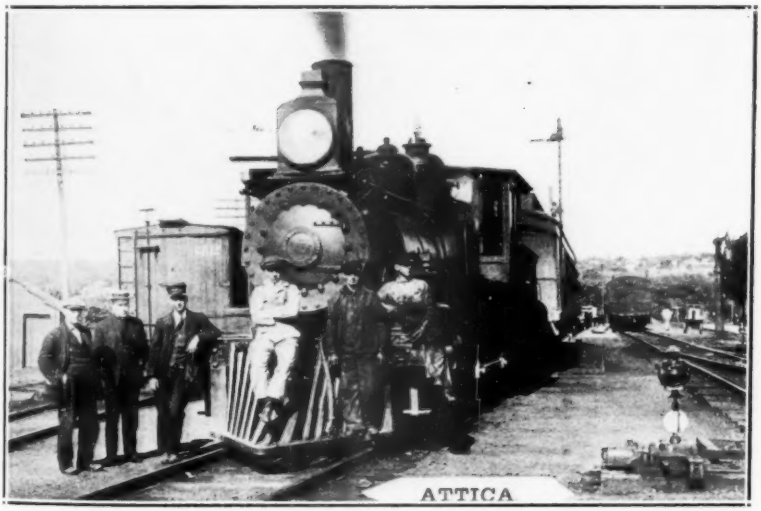


B. E. & C. R. R., which was the southern division of the Erie's narrow gauge system.
Taken at Bradford, Penna., some time between 1881 and 1885.



Buffalo, Attica & Arcade R. R. Standard Gauge.

Locomotive No. 3, which was the fourth engine, all second hand, purchased by the company. Standing by tender, James Royce who was killed switching in the Arcade yards about 1905.
L to R: Earl Van Valkenberg, engineer, now lives in Warsaw, N. Y. His brother, Frank Van Valkenburg, brakeman, now lives in Warsaw, N. Y. Wm. Stevens, fireman, in cab, dead. Picture taken about 1900. This engine was Western New York & Penna. R. R. No. 40, purchased by the B. A. & A. for $1000.



Buffalo, Attica & Arcade R. R.

Locomotive 5, purchased from the B. & O. R. R., was built by the New York Locomotive Works, Rome, N. Y.
L to R: First two persons are passengers. 3. Lynn Smith, conductor, dead. 4. Freight brakeman (name not remembered) killed switching in Arcade yards. 5. Arthur Rhinehardt, Fireman; now lives at Nunda, N. Y. 6. Earl Dean, Engineer; still an engineer on the A. & A. Taken about 1915.

Buffalo, Attica & Arcade R. R.

Narrow gauge. Taken about 1895. Locomotive No. 7, purchased from Olean, Bradford & Warren R. R., built by the National Locomotive Works, Connellsville, Penna.

Left to right: Samuel T. Lake, engineer, lives in Arcade. Calvin Haskell, conductor, dead. Two section hands; names not remembered. Albert Shelby, baggageman, dead. Two Silvernail brothers from Johnsonburg, section men. Fred Remington, express messenger for the Wells Fargo Co.; later in insurance business in Arcade and died an [illegible]

of the Erie, running southerly through the townships of Attica, Bennington, Sheldon, Java and Arcade, thence southwesterly into Cattaraugus County, through the valleys of Ischua Creek, Five Mile Creek and the Allegheny River, to a junction with the Allegheny Valley Railroad (being built northerly from Pittsburgh) on the state line at Bullis Mills. Stock was subscribed and the work commenced promptly by a contracting firm from New York City. Roadbed, culverts, etc., were completed from Attica to Curriers Corners in Wyoming County and considerable grading done in the townships of Yorkshire and Machias in Cattaraugus County. Up to September 1853 $110,000 had been expended and the engineers estimated it would cost $62,000 more to complete the right of way. This additional sum was not forthcoming which resulted in foreclosure proceedings being filed in December 1854 and the abandonment of the project.

In the state's records at Albany there appears the ATTICA AND ARCADE RAILROAD COMPANY, incorporated February 28, 1870, to construct a steam railroad between the villages of Attica and Arcade, a distance of twenty-five miles. The last report of this company to the state authorities, dated January 18, 1871, shows that nothing had been done towards construction. Probably this was simply a paper organization.

In 1872 efforts were again made to go ahead with the proposition, this time under the name of the BATAVIA, ATTICA AND SALAMANCA RAILROAD COMPANY, incorporated in that year. The records show the purpose to be the construction of a single track steam railroad from the village of Attica to the village of Arcade, thence southwesterly into Cattaraugus County, following the course of Great Valley Creek through the townships of Yorkshire, Machias and Ellicottville to the city of Salamanca. The president of this company had secured in April 1864 a quit claim deed conveying to him one-half of the lands and partially constructed railroad of the Attica and Allegany Valley. The records at Albany show that he wrote a letter each year up to and including 1876, from Buffalo, signed by himself as president of the company, all reading to the effect that the road had not been located and nothing done on its construction beyond the organization of the company. Evidently it ceased to exist after 1876. Probably stock could not be sold to raise the necessary funds.

The year 1880 saw the plan again revived by a group of Buffalo financiers and officials of the Erie Railway in that city who controlled several other narrow gauge lines in the western portions of New York and Pennsylvania. They organized three companies, as follows:

TONAWANDA VALLEY RAILROAD, incorporated April 5, 1880, to construct a single track, steam, narrow gauge railway from Attica to Curriers Corners, nineteen miles. They evidently made use of the abandoned right of way constructed by the Attica and Allegany Valley, because we find in September, 1880, trains running between Attica and Curriers.

TONAWANDA VALLEY EXTENSION RAILROAD, incorporated in May, 1880, to construct a narrow gauge steam railroad from Cur-

The Tonawanda Valley Railroad.

TIME TABLE No. I.

Distance.	TRAINS NORTH.	A. M.	P. M.	Distance.	TRAINS SOUTH.	A. M.	P. M.
	Lv. CURRIER'S	7.00	2.00		Lv. ATTICA	10.30	7.00
2 88	" JAVA CENTRE	7.10	2.13	3 28	" *SIERK'S	10.45	7.13
5 91	" NORTH JAVA	7.24	2.30	5 65	" *EARL'S	10.58	7.23
6 51	" *PERRY'S	7.28	2.34	7 48	" VARYSBURG	11.08	7.31
9 44	" JOHNSONBURG	7.40	2.50	9 59	" JOHNSONBURG	11.20	7.40
11 65	" VARYSBURG	7.50	3.02	12 02	" *PERRY'S	11.36	7.52
13 48	" *EARL'S	7.58	3.12	13 22	" NORTH JAVA	11.40	7.56
15 87	" *SIERK'S	8.07	3.24	16 75	" JAVA CENTRE	11.58	8.10
19 13	Ar. ATTICA	8.20	3.40	19 13	Ar. CURRIER'S	12.10	8.20

At Stations marked thus * Trains will stop only on signal.

☞ Trains on this Road run by New York Time.

J. V. D. LOOMIS,

ATTICA, Sept. 27th, 1880. Superintendent.

riers Corners to a connection with the Buffalo, New York and Pennsylvania Railroad (formerly the Washington Railroad) in the township of Sardinia, eleven miles. They built only as far as Arcade, six miles, and must have pushed construction, considering that everything in those days was done with pick and shovel with two wheel carts hauled by mules, because the first passenger train from Arcade to Attica ran on May 16, 1881.

TONAWANDA VALLEY AND CUBA RAILROAD, incorporated July 12, 1881, to construct and operate a single track steam railroad from the village of Arcade in Wyoming County to the village of Cuba in Allegany County, thirty-five miles.

In August, 1881, these three railroads were consolidated under the name of the Tonawanda Valley and Cuba, thereby giving the promoters a narrow gauge, single track steam railroad, sixty miles in length, extending from a connection with the New York and Erie Railroad at Attica, southerly through Wyoming County, following the line of Tonawanda Creek, to Sandusky, thence twisting and turning over the high hills in the northwesterly part of Allegany County, to Caneadea Creek and the village of Rushford, thence south through the Rawson Valley to the village of Cuba, where it connected at the New York, Lake Erie and Western Railroad depot in that village, with the Bradford, Eldred and Cuba Railroad, a narrow gauge line also controlled by the same Buffalo interests. This gave the promoters a through route from Attica to Bradford, Penna., thereby tapping the rich oil regions of northern Pennsylvania. Locally the T. V. & C. was referred to as the "Northern Division" and the B. E. & C. was called the "Southern Division" of the Erie's narrow gauge system. The B. E. & C. operated under lease the Wellsville, Bolivar and Eldred Railroad, and this was termed the "Eastern Division."

Here is shown a statement, dated August 29, 1881, of the Tonawanda Valley and Cuba Railroad, a consolidation of the Tonawanda Valley, the Tonawanda Valley Extension and the Tonawanda Valley & Cuba Railroads.

Cost of Construction:	
Grading and masonry	$627,190.
Bridges	13,250.
Rails, etc.	409,500.
Stations and buildings	8,900.
Engine and car houses	1,500.
Land and fences	39,300.
Engineering	9,600.
Locomotives	41,800.
Passenger and baggage cars	17,800.
Freight cars	10,800.
Telegraph	682.

Gauge 3 feet; Attica to Cuba 59 miles; sidings 2½ miles; poles owned by railroad, wires by Western Union; 2 passenger locomotives; 2 freight locomotives; 1 switcher; 91 employees; salaries $41,737.

The officers of the entire narrow gauge system, which included the T. V. & C., the B. E. & C., and the W. B. & E.; were President Richard G. Taylor of Buffalo (at that time he was Superintendent of the Buffalo

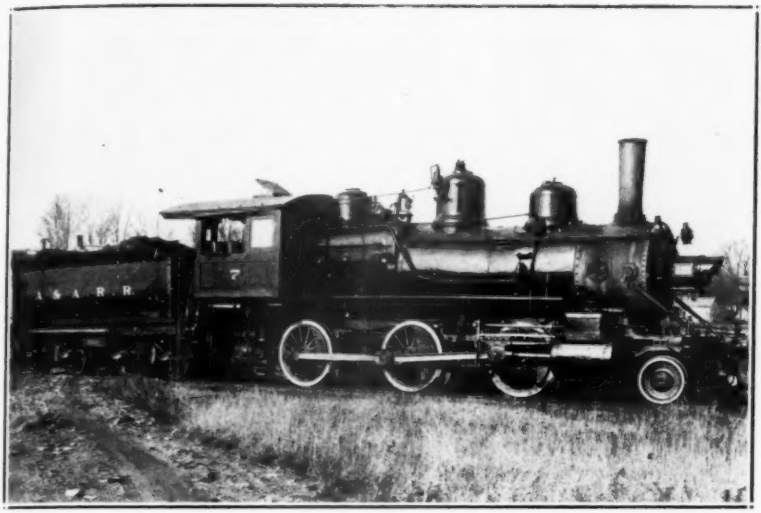
Division of the Erie), Vice President George R. Blanchard of New York City, Secretary John E. Ransom of Buffalo, Treasurer Bird W. Spencer of Passaic, N. J., Comptroller Stephen Little of New York City, General Manager Byron C. Williams of Attica, Assistant General Manager Frank M. Baker of Addison, Master of Transportation Lyman C. Siggins of Rushford, Superintendent John V. D. Loomis of Attica, Assistant Superintendent Charles D. Williams of Cuba, General Freight & Passenger Agent, William W. Atwood of Wellsville.

No one living in Allegany County now seems to have much recollection of the older employees of this railroad. Nearly all the engineers, conductors and firemen came in from other parts of the country when the road was first opened and upon its abandonment they scattered to other sections, many going west where new railroads were being built. Railroading in those days was booming and an experienced man could secure a position almost immediately, the Brotherhoods then being in their infancy and "rights" and "seniority" unheard of. Practically all the brakemen, section men, station employees, etc., were natives of Wyoming and Allegany counties and there are a half dozen of these men still living around Rushford. They worked on the road during the five years of its existence and then returned to their former vocations and so many years have elapsed that they are able to give the writer little or no help.

Those of the conductors who are remembered were Elmer E. Gilbert, of Attica, William Frank of Allentown, James A. Russell of Wellsville and George Briggs of Rushford. As far as can be learned, these men all went west. Among the engineers there were William Owens of Attica, Oliver Washburn of Rushford and Frank Mingous of Painted Post.

Williams Owens is the most remembered of all persons who were in any way connected with the railroad, undoubtedly because of his outstanding career. He was a native of Attica and seems to have had some experience on the Erie before the construction of the T. V. He ran a locomotive as long as the road lasted and then was an engineer on the Rochester, Hornellsville & Lackawanna Railroad. In 1890 he went to the Lehigh Valley Railroad as engineer and was one of the first men assigned to the Black Diamond Express when that train was inaugurated May 18, 1896. Some years later he was promoted to Road Foreman of Engines and continued in that capacity until he resigned to become Eastern Sales Representative for the New York Air Brake Company, where he remained until his death in Buffalo in 1925.

The village of Rushford, surrounded by a populous and thriving agricultural and lumbering section, seems to have been the center of activities of the T. V. & C. A history of that village, published years ago, says that previous to the coming of the railroad it was a quiet hamlet. With the railroad boom the village grew in leaps and bounds, a number of families built expensive homes there, a brick business block was constructed, mills and other commercial enterprises. The history further says, "In Rushford a number of prominent citizens raised nearly twenty thousand dollars to assist in financing the railroad. In June, 1882, the track-laying gang reached Rushford from Cuba and the people turned out in great numbers to celebrate the event. On the Fourth of



Arcade & Attica R. R.

Brooks Loco. Works, 1900.

Depot at Arcade, N. Y.

Originally constructed by the T. V. E. R. R. Used by the T. V. & C., the A. & F., the B. A. & A., and now by the A. & A. The frame building to the left is the present general offices of the A. & A. R. R. Corp.

DAVID KIRKPATRICK

Scottish descent; his family came to the U. S. in 1736 and settled in New Jersey. David was born at Romulus, N. Y., Dec. 29, 1820. From 1850 to 1860 he was section foreman on the Allegany Division of the Erie and from 1860 to 1881 track supervisor of the Western and Buffalo Divisions of the Erie and lived in Attica, N. Y. July 12, 1881 he became Superintendent of Construction of the Tonawanda Valley & Cuba between Cuba and Attica and built the railroad. He moved to Cuba in 1882 and remained there until his death, April 6, 1903.

GENESEE
Batavia
BATAVIA
STAFFORD
PEMBROKE
Corfu
Alexander
ALEXANDER
BETHANY
Linden
LANCASTER
ALDEN
Darien
Attica
Marilla P.O.
Cowlesville
Bennington
MIDDLEBURY
Wyoming
COVING
IMARILLA
BENNINGTON
ATTICA
Dale
Lagrange
Elma
Porterville
Wales Center
Varysburg
SHELDON
WARSAW
Warsaw
Loveland
East Aurora
AURORA
Wales
Colegrove
Johnsonburg
ORANGEVILLE
Warsaw P.O.
WALES
WYOMING
Sheldon
South Wales
West Falls P.O.
Strykersville
Java Village
Java Center P.O.
Java Center
JAVA
WETHERSFIELD
Hermitage
GAINESVILLE
Rock Glen
Silver Lake
Castile
Glenwood
Java
Currlers
East Java
Bethersfield
Hardys
COLDEN
HOLLAND
Holland
Protection
ARCADE
Bliss
EAGLE
Lamont
Letchworth Park
PIKE
Portageville
Chaffee
East Arcade
SARDINIA
Sardinia
Eagle P.O.
Eagle
East Concord
CONCORD
Concord
Springville
Springville I.C.
Arcade
Delevan P.O.
Delevan
Sandusky
CENTERVILLE
Centerville P.O.
Freedom
Hume
Mills
Cascade Park
YORKSHIRE
FREEDOM
Fillmore
Hoyts
East Ashford
Crystal Lake
Elton
Rice ville
Fox
ASHFORD
Lime Lake
Machias
Farmersville
Rushford
CANEADEA
West Valley
Ashford P.O.
MACHIAS
Laidlaw
Farmersville P.O.
FARMERSVILLE
RUSHFORD
Bird
Maples
ELLICOTTVILLE
Ashford
Franklinville
Cadiz
Marshall
Rockville
Transit Bridge
ARGUS
Elgin
NEW HUDSON
Ellicottville P.O.
FRANKLINVILLE
LYNDON
Black Creek
BELFAST
ALLE
Valley
Sugartown
Ischua
Belvidere
North Cuba
Humphrey Corner
HUMPHREY
ISCHUA
Great Valley
Great Valley P.O.
Humphrey
Friendship
Belmont
GREAT VALLEY
Cuba
CUBA
FRIENDSHIP

T. V. & C. R. R. Map

July an excursion train was run to Cuba. Early in September the entire road was opened for traffic and on September 25, 1882, a time table went into effect. In May, 1884, a night freight was put on and this was the culmination of the prosperity of the road. In June, 1885, the mail train was taken off and the company's employees struck for four months back pay. Soon business was resumed, but the trains were irregular. In November, 1885, another strike for pay occurred. An irregular service was kept up until October 16, 1886, when trains were discontinued south of Sandusky by order of the Receiver. Nearly all the bonds taken by Rushford people were sold in December, 1885, for 24½ cents on the dollar."

The beginning of the end of the T. V. & C. was a heavy snow storm early in December 1884 which closed the road for several weeks, and then, in the spring of 1885 a mixed passenger and freight train fell through a trestle over Caneadea Creek near Rushford. During the night heavy rains and swelling of the creek undermined the abutments, but the trestle, as far as the engine crew could see, was intact and all right. The engine crossed over safely but the passenger coach, combination baggage express and mail car went through the trestle and into the creek, killing one passenger and injuring several severely. This resulted in judgments against the company which it was unable to meet. The locomotives, although new upon the opening of the road, soon played out because of the long steep grades. There were cases of runaway trains, many minor accidents, incompetent and disloyal help, all hastening the inevitable. Things went from bad to worse. In 1885 Bird W. Spencer of Passaic was appointed receiver for the T. V. & C., and Thomas C. Platt of New York City for the B. E. & C. and the W. B. & E. In November, 1886, the property was sold under foreclosure of the mortgage to a purchasing committee for the bondholders, and was conveyed by this committee to the Attica and Freedom Railroad Company November 30, 1891.

THE ATTICA AND FREEDOM RAILROAD was incorporated October 26, 1891, to operate that portion of the old T. V. & C., from Attica to the hamlet of Fish Lake (now Crystal Lake) in the township of Freedom, Cattaraugus County, a distance of thirty-three miles, the principal owners of the company being former bondholders and clients of the Bank of New York at 48 Wall Street. The old right of way from Fish Lake to Cuba was abandoned. The company continued operations until the spring of 1894, when, being unable to make the road pay, it was again sold under foreclosure of mortgage, April 3, 1894, to a committee of the bondholders, which committee, on November 19, 1894, sold the property to a railroad builder of Olean, N. Y., who organized the BUFFALO, ATTICA AND ARCADE RAILROAD COMPANY (incorporated October 15, 1894) and deeded the line to this company as of February 14, 1895.

The B. A. & A. resumed operations between Attica and Fish Lake, made considerable improvements in the property, changed the line from narrow to standard gauge, constructed a branch one and a half miles long following Cattaraugus Creek from Arcade to Hurdville (formerly West Arcade) where a connection was had with the Pennsylvania's Buf-

falo Division, and, at about the same time (1903) taking up the eight miles of trackage from Arcade to Fish Lake. Everything possible was done to put the road on a paying basis, but fate seemed to be against it, for in March, 1917, the company became so financially involved that operation was discontinued. It remained so until May 31, 1917 when the property was sold under foreclosure.

Another reorganization then took place, under the name of the ARCADE AND ATTICA RAILROAD CORPORATION (incorporated May 20, 1917) a sort of copartnership among the agriculturists and business men living in the territory served by the road who are public spirited and wish the continuance of railroad service through the valley. During its eighteen years of ownership this corporation has established a record for uninterrupted organization, has replaced the light rail with heavier steel, the old ties with creosoted timbers and made other improvements to enable the property to be operated at a greatly decreased cost for maintenance. It is so being operated at the present time. In addition to a connection with the Erie and the New York Central at Attica, the company maintains the branch from Arcade to Hurdville where a connection is had with the Buffalo Division of the Pennsylvania Railroad System.

For several years past, competition with the railroad by unregulated trucks has increased to such an extent that practically all of the local or short haul traffic has left the railroad and only the long haul and heavy traffic remains.

The activity of the A. & A. at this writing consists of one mixed freight train daily in each direction, hauling one coach. The crew makes the round trip from Arcade and is generally through work by two in the afternoon.

The last annual stockholders' meeting of the A. & A. was held in Arcade on Saturday, February 16, 1935. Two hundred stockholders were present. A special train was run from Attica south in the morning to carry the stockholders to Arcade and back again in the evening. There were three coaches full. As the A. & A. owns only two coaches, they had to borrow one from the Erie. Two locomotives were used that day, No. 7 was on the way freight and No. 6 hauled the special.

Old railroad employees at Attica tell of an ingenious device which the Tonawanda Valley & Cuba had for the interchange of cars at that depot. The Erie and the New York Central were standard gauge, while the T. V. & C. was narrow gauge. There was a hoisting arrangement whereby the bodies of the freight cars were lifted from the trucks of the narrow gauge and placed on the trucks of the standard gauge, and vice versa. This made it unnecessary to transfer the loads from car to car when they were destined for points on other lines. A somewhat similar arrangement could well be utilized today by the railroads throughout the country as an improvement in their service. Motor trucks could be used in the outlying countryside to pick up and deliver large shipments; the truck could be driven alongside the railroad tracks, the body hoisted from the motor chassis and placed on the railroad trucks, the same as was done fifty years ago with the small box cars of the narrow gauge railroad.

If no other good comes to the present generation from the story of the ill-fated Tonawanda Valley lines, it seems as though we should learn at least this one lesson.

ARCADE & ATTICA LOCOMOTIVE ROSTER

Engine Number	*Builder*	*Date Built*	*Type*	*Purchased From*	*Final Disposition*
1	Baldwin	1894	2-6-0	Toronto, Hamilton & Buffalo Railroad Co.	On Hand
2	Schenectady Loco. Co.	Rebuilt 1901	2-6-0	New York Central R. R. Co.	Scrapped
3	Cooke Loco. & Mach. Co.	1892	4-6-0	Lehigh & Hudson River Ry. Co.	Scrapped
*4	Baldwin	1894	4-6-0	Genesee & Wyoming R. R.	Scrapped
5	Pittsburgh Loco. Co.	1892	4-6-0	Louisville, Henderson & St. Louis Ry. Co.	On Hand
†6	Baldwin	1907	4-6-0	Illinois Central R. R.	On Hand
‡7	Brooks Loco. Works	1900	2-6-0	Buffalo, Rochester & Pittsburgh Ry. Co.	On Hand
‡8	Brooks Loco. Works	1897	2-6-0	Buffalo, Rochester & Pittsburgh Ry. Co.	On Hand

*Originally purchased by Genesee & Wyoming R. R. from Buffalo & Susquehanna Railway.

†Originally property of Alabama & Vicksburg Ry., which was taken over by the Illinois Central.

‡Originally property of Reynoldsville & Falls Creek Ry., which was taken over by the B. R. & P. Ry.

Canadian Celebration

At the time of going to press, no definite plans have been received relative to the celebration at St. Johns on July 21, 1936, to mark the one hundredth anniversary of the Champlain & St. Lawrence R. R. However, it is not the intention of the Canadian Railroad Historical Association to allow this anniversary to pass unnoted. Details will be worked out and may be had by addressing our Canadian Representative, Mr. Robert R. Brown.

New York Public Library

The New York Public Library, Fifth Ave. and 42nd Street, New York City, is very anxious to complete their file of publications issued by this Society. They lack copies of our Bulletin Nos. 1, 2, 9, 10 and 11. If there are any of our members who have no further use for their copies and care to donate them to the New York Public Library, please get in touch with Mr. Robert Lingel, Chief of Acquisition Division. They will deeply appreciate this favor from any of our members.

Samuel T. Lyke

The only man living today who was an officer of any of the older roads which went to make up the present Arcade and Attica Railroad is Samuel T. Lyke of Arcade, N. Y., now eighty-two years of age. Mr. Lyke was born in Tompkins County, New York, in 1853. When eight years old his parents moved to Elmira, N. Y., and when he was thirteen years old to Sandusky, N. Y., where he learned the trade of a carriage trimmer. When the Tonawanda Valley & Cuba commenced operations he became an engine wiper in the yards at Rushford and shortly thereafter was appointed a locomotive fireman, occasionally acting as relief engineer. When the Attica & Freedom was formed he became a regular engineer, serving throughout the short life of that company, and then, with the reopening of the road under the Buffalo, Attica & Arcade he resumed his work as a locomotive engineer, making his home in Arcade. Several years later he was promoted to Master Mechanic and in 1897 he was made Superintendent of the road, continuing in that office until 1910 when he resigned to devote his entire time to his private interests, principally real estate. For some years now he has lived in retirement, in good health, enjoying a well earned rest. His service with the three companies covered a period of about thirty years and was marked by loyal, conscientious and intelligent endeavor. He is one of Arcade's leading and most respected citizens.

INTRODUCTORY

The New York Chapter, in making its initial appearance as a department of and a contributor to the "Bulletin," takes pleasure in presenting to its readers the authoritative and interesting historical address entitled, "Railroads and the Confederacy," presented before the Chapter on December 13, 1935, by Colonel Robert S. Henry, Assistant to the President of the Association of American Railroads.

Colonel Henry, a Tennesseean, is a graduate of Vanderbilt University; was in newspaper service; served as secretary to the Governor of his native state; is a member of the Bar; served as Captain of Field Artillery in the World War and is now a Lieutenant-Colonel in the Field Artillery Reserve; and spent a number of years in executive service with the Nashville, Chattanooga and St. Louis Railroad Company prior to his affiliation with the Association of American Railroads. He is also the author of "Trains" and "The Story of the Confederacy," two widely read books.

Railroads and the Confederacy

COLONEL ROBERT SELPH HENRY

THIRTEEN American colonies, somewhat unwillingly forced into common action by common difficulties with Great Britain, declared on July 4, 1776, that they were "free and independent States"—but that declaration, immortal as it it, was but a scrap of paper until eight years of war under the commanding power of George Washington made it true.

The thirteen States which achieved independence were unequal in size, in population, and in wealth, each sovereign in its own sphere, each jealous of every other, and each afraid that its individuality might be impaired or submerged. Under such circumstances, they gathered in the summer of 1787 to frame a Constitution for a permanent "United States"—but it took two years of heated debate over ratification by State conventions, two generations of national growth, four years of war, and the invention and development of a system of transport of which the constitutional fathers had never dreamed, to weld them into a true and indissoluble union.

It is hard now to realize what slight hold the idea of nationalism had on the people of the thirteen States strung along the Atlantic Seaboard at the beginning of our history. The very practical men who framed and ratified the new Constitution had deliberately eliminated from it the word "national," in favor of the looser term "federal", for, as Henry Cabot Lodge, of Massachusetts, has written:

> "When the Constitution was adopted by the vote of States in popular conventions, it is safe to say there was not a man in the country, from Washington and Hamilton, on the one side, to George Clinton and George Mason, on the other, who regarded the new system as anything but an experiment, entered into by the States, and from which each and every State had the right to withdraw, a right which was very likely to be exercised."

Regardless of later interpretation of the Constitution, there can be no doubt that this was the contemporary view of the men who created it. New York, Virginia and Rhode Island required reassurance on this very point, and Hamilton and Madison, through the *Federalist*, did so assure them. The Constitution, with a good deal of doubt and suspicion, was ratified, and the new experiment started.

The experiment worked. Not the least of the reasons for its success was that very Constitution, which nowhere explicitly mentioned or settled the question of the right of secession, but which did definitely settle and determine some other most important rights—the right of property, for one, the right of a man to work and earn and save and be secure in his savings from taking without due process of law; and the right to freedom of commerce among the several States, for another, the right to trade across State lines without unreasonable and discriminatory interference from local authorities.

Even while the Revolution was on and the government was forming, the people pressed westward and the new nation grew. Virginia, great mother of States and statesmen, donated to the common weal the empire of the Old Northwest Territory, hers not only by right of royal grant but even more by right of conquest at the hands of George Rogers Clark and his handful of half-drowned and half-frozen riflemen at Vincennes.

Jefferson, through the purchase from Napoleon in 1803 of a somewhat flawed title to Louisiana Territory, added immensely to the westward expansion of the nation, and at the same time put upon it its first severe internal strain—for worthy and respectable gentlemen in New England strongly objected that it was a breach of the "compact between the States"; an objection even more strongly expressed when Louisiana was admitted as a State, the first to be carved from the newly acquired territory. "The bonds of the Union are virtually dissolved," said Josiah Quincy of Massachusetts. "As it will be the right of all States, so it will be the duty of some, to prepare definitely for a separation—amicably, if they can; violently, if they must."

The War of 1812, wherein Andrew Jackson and his frontier riflemen forever settled any question about the title to Louisiana by winning the Battle of New Orleans, saw respectable men at the other end of the country, in New England, seriously considering separation from a government engaged in what seemed to be a death struggle.

The idea of the right of a State to secede from the Union was in no sense sectional and Southern, but it happened that it received its first famous expression from South Carolina, whose Senator Hayne engaged with Daniel Webster in the memorable debate of 1830. Of that debate it has been well said that Webster amended the Constitution of the United States with a single speech, but important as is that speech in the development of the idea of a united nation, it would have been finally of no avail had there not been in that very winter of 1830 gangs of laborers laying tracks for that new sort of highway known as a "*rail* road" from Baltimore toward the Ohio, and other gangs running lines from Charleston through the Carolina pine woods to the west.

Statesmen thought and spoke and wrote; explorers and soldiers wrought mightily; pioneers followed behind along the water courses; but the iron rail was the tie that in the end was to bind together into one a vast, scattered, and inaccessible continent. "Our Federal Union. It must be preserved!", spoke stern old Andrew Jackson of Tennessee, as the slow creep of the iron rails to the west was beginning—a declaration of unbending determination which staved off the crisis for nearly a generation. During that generation, from the day when railroads started until the day when the Confederacy laid down its arms and gave up its dream of separate nationhood, the railroad determined the evolution of these States into an integral nation.

There were to come other strains upon the structure, this time not from the South, but again from the North. Less than a decade after the railroads started, and while they were yet on the eastern slope of the mountains, Sam Houston and his men made Texas free. Less than a

decade more, and before the railroads had penetrated the valley of the Mississippi, Texas was taken into the United States.

Even at that time, but sixteen years before the outbreak of the great war which was to settle forever the question left open in the Constitution, the spirit of nationalism was so weak that the Legislature of Massachusetts solemnly resolved that "the project of the annexation of Texas, unless arrested at the threshold, may tend *to drive these States into a dissolution of the Union.*" Still later, when the War with Mexico came to be fought, and California and the great Southwest to be added to complete continental United States, it was the extreme abolitionists of the North, whose crusade was so soon to end in bringing on the war to preserve the Union, who were most bitter in their denunciation of that Union and the Constitution under which it was formed, a Constitution which, to them, was "a covenant with death and a league with hell."

But while statesmen and soldiers and pioneers drove the boundaries westward, and while editors and orators and crusaders fumed and flamed, the railroads pushed on. There appeared upon the navigable waters tributary to the Mississippi the rail-heads of the Pennsylvania at Pittsburgh and of the Baltimore & Ohio at Wheeling within the same twelvemonth in which was closed the last gap in the line linking the "western waters" at Nashville with the South Atlantic Coast.

That was the year 1853-54, only seven years before the convulsion of war was to overwhelm the country. During those seven years, and the four years of war that followed, those little new railroads decided the fate of the United States, and, for all we know, of the Western world. These first roads, and those which followed them, came from the eastern seaboard across the mountains into the great rich valley of the interior—a valley which since settlement began had traded down the Mississippi River, into the cotton raising South and on to foreign nations through the port of New Orleans, and which, until the railroads came, had depended on that trade for its economic life.

And here, into this valley, came thrusting the railroads from the East, to come along up from the foot of the Great Lakes, to cross the Ohio, to push across the prairies to Cincinnati and St. Louis and that new village on the lake, Chicago. And with their coming, unnoticed, economic life began flowing in new channels; new ties of interest and loyalty were forged; and when the great break came, the indispensable Northern West, without which the Union could not have won its war, turned to join the Northern East, rather than to its old associations down the river with the South.

While these lines north of the Potomac and the Ohio were knitting together the East and the West of the North, the Southern railroads developed into that net of interior lines which, so long as they could be held, made possible the prolonged resistance of the Confederacy.

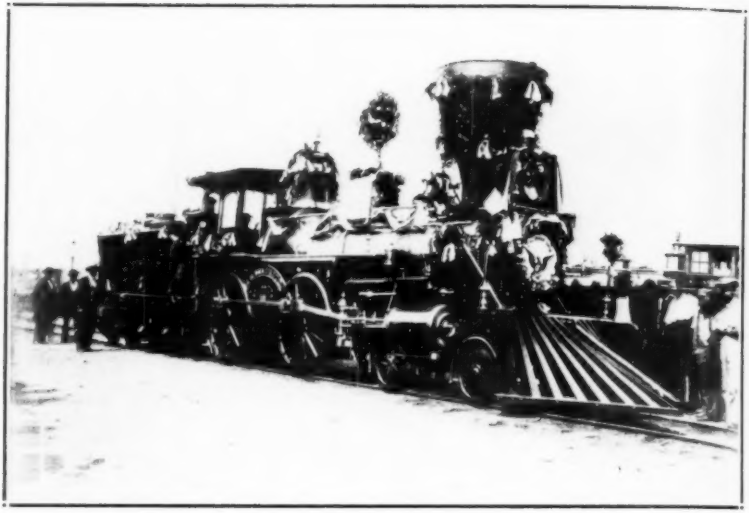
The War between the States was the first railroad war. The harbors and the seacoast of the South were blockaded, almost from the beginning; her rivers ran the wrong way for the Confederacy. The Mississippi, the Cumberland and the Tennessee, the James and the York, the Red,

Courtesy of M. L. Bernstein.

Orange & Alexandria R. R.—Union Mills, Va.

Courtesy of M. L. Bernstein.

Orange & Alexandria R. R. Round house and Depot at Alexandria, Va. Engine "Lion" in foreground.

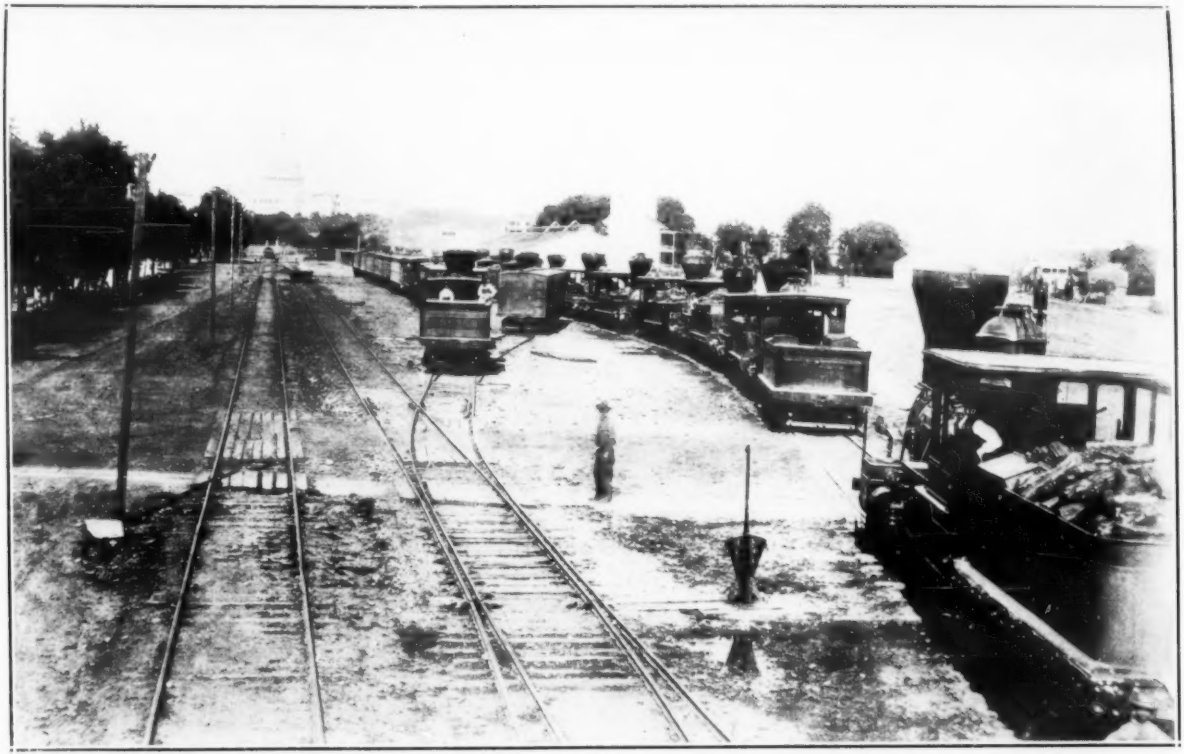


Courtesy of M. L. Bernstein.

U. S. Military R. R. "J. H. Devereaux". N. J. Loco. Wks.

Courtesy of C. E. Fisher.

Round house at Atlanta, Ga., after Sherman's March to the Sea.
Engines: "O. A. Bull" on turntable; "Hercules" under arch; "E. Y. Hill" to the left; "P. Stovall" next; "Telegraph" in foreground.



Courtesy of M. L. Bernstein.

Engines stored at Washington, D. C. to prevent their falling into the hands of the Confederates in case of raid on Alexandria. Note Capitol in background.

Drawn by E. Andre Schefer.

The Most Famous Race in History. The Pursuit of the "General."

the Arkansas and the White, controlled by the superior power of Union gunboats, were avenues of invasion into the body of the Confederacy, rather than lines of communication between its sections.

On its railroads the Confederacy had to depend, and especially on the two great east-and-west arteries connecting Virginia and the capital with the Central South. Those familiar with the railroad map of today will recognize them best under their modern names—the northern line, a combination of what is now the Norfolk & Western from Petersburg to Bristol, with the line of the Southern Railway from Bristol through Knoxville and Chattanooga to Memphis; the more southerly line, a combination of the Atlantic Coast Line through Wilmington to Charleston, the Southern Railway from Charleston to Augusta, the Georgia Railroad to Atlanta and the West Point Route to Montgomery, with the Louisville & Nashville on to Mobile Bay.

The history of that line illustrates vividly the shortage of manufactured iron in the Confederacy. Before the war the railroad ran from Montgomery to Pensacola, but Pensacola fell to the Union Navy in May, 1862, whereupon the iron on the last fifty miles or so was taken up and used in laying a line to the eastern shore of Mobile Bay.

The Mobile & Ohio Railroad ran from the western shore of that bay northward, almost to the Ohio River. At Meridian it was intersected by the Alabama & Vicksburg, now the Yazoo & Mississippi Valley. This line, in turn, met at Jackson, Mississippi, the old New Orleans, Jackson and Great Northern, running south to New Orleans, and the Mississippi Central, running north to Jackson, Tennessee, with a connection to Memphis, all now part of the Illinois Central.

These lines were in no sense the continuous rail lines to which we are now accustomed. At many towns there was a break in the track, across which freight and passengers had to be transferred by wagon, thereby making business for local teamsters and local hotels who resisted strenuously efforts of the Confederate Government to connect the disjointed lines. In addition to these town-made obstructions, there were unbridged natural obstacles such as the Cape Fear River at Wilmington and the long water gap across Mobile Bay.

There was another obvious weakness in this net—the fact that the line dipped clear south to Mobile, and so was exposed to attack by the Union fleet. The answer of the Confederacy was the building of a link from Meridian east to Selma, Alabama, where steamboat connection could be made to Montgomery.

There was another weakness, too, at the eastern end of this line, where the railroad, from Richmond through Petersburg and on down to Wilmington, passed dangerously close to the coastal inlets and sounds of Virginia and North Carolina, which early in the war passed into the control of the Union Navy. Many Confederate regiments, desperately needed elsewhere, had to be held to guard this vital zone until, just before the Weldon Railroad was finally cut below Petersburg, the Confederate government provided itself with an inner line by building a connection between Danville, Virginia, and Greensboro, North Carolina, and so connecting Virginia with the deep South by way of what is now

the Southern Railway route from Richmond to Danville, Charlotte, and Columbia, South Carolina.

The Confederacy was able to meet the threats of Mobile Bay, and of the Carolina and Virginia estuaries, but there was another threat, man-made and Southern-built, through which, ironically, there came the final overwhelming disaster to the Confederacy, and the deciding victory to Union arms.

It was a line of railroad, extending from the Ohio River southeastward, to cross at the key points of Chattanooga and Atlanta the two east-and-west lines of the Confederacy, over which they had so often transferred men and materials and supplies along the thousand mile front from the Mississippi River to the Potomac.

It is impossible to exaggerate the importance of Sherman's Atlanta campaign in its effect on the outcome of the War for the Union—not only for its immense military effect in finally cutting the arteries of the Confederacy, but quite as much in its political effect in furnishing the visible evidence of forthcoming victory needed to secure the re-election of Abraham Lincoln and to hearten the North for one more winter of war, after the appalling losses of the summer of 1864.

The holding of Chattanooga and the capture of Atlanta, it is not too much to say, was the decisive event of the War. It paralyzed the South in its nerve center, and led up to a dismemberment of the body of the Confederacy more fatal than the earlier division along the line of the Mississippi River. The line of railroad from the Ohio River to Atlanta—the Louisville & Nashville to Nashville, and the Nashville & Chattanooga and Western & Atlantic to Atlanta now operated by the Nashville, Chattanooga & St. Louis—became an ally, unwilling perhaps, but certainly the indispensable ally of General Sherman in his epochal campaign.

> "That single stem of railroad, 473 miles long, supplied an army of 100,000 men and 35,000 animals for the period of 196 days, from May 1 to November 12, 1864," wrote Sherman. "The Atlanta campaign was an impossibility without those railroads and possible only then because we had the means and the men to maintain and defend them in addition to what was necessary to overcome the enemy."

The operation over a line which, from Nashville to Atlanta, at least became almost one continuous and unbroken battle field was under the United States Military Railroads.

> "Our trains from Nashville were operated under military rules," wrote Sherman, "and run about ten miles an hour in gangs of four trains each. Four groups of trains daily made 160 cars of ten tons each, carrying 1,600 tons, which exceeded the absolute necessity of the army and allowed for accidents that were common and inevitable."

It is an interesting detail that trains returning to the base at Nashville were detoured from Stevenson, Alabama, over the old Memphis & Charleston and Nashville & Decatur roads, now the Southern Railway and the Louisville & Nashville, thus leaving the track of the N. & C. clear for south-bound supplies and re-enforcements.

Citizens of Charleston, more than anyone else, were responsible for the existence of the railroad along which, finally, was to come the devasting conquest of their State and city. From the very first years of railroad building in America, the proud Carolina city had pioneered. The first railroad in the world designed from the beginning for the use of locomotives, without a horse path between the rails, being the same railroad which first in the world attained the length of one hundred miles, was Charleston built. This line, which reached the Savannah River opposite Augusta, was the first step in the tremendous effort put forth to bring to Charleston the commerce of "the West."

The line was continued, largely under the leadership of Augusta people, by the Georgia Railroad & Banking Company to a point in the woods which became Atlanta. From that point to a landing on the Tennessee River, which became Chattanooga, the State of Georgia itself, under the corporate designation of the Western & Atlantic Railroad, built on, completing the line in 1851.

Meanwhile, in 1845, private citizens in Tennessee organized the Nashville & Chattanooga Railroad, to build east from Nashville to meet the line of the State of Georgia. John C. Calhoun of Carolina was active and effective in his encouragement and cooperation with those who conceived the daring project of tunneling Cumberland Mountain and bridging the wide Tennessee, while the City of Charleston itself bought, and for many years held, half a million dollars in the stock of the company.

Soon afterward, Kentuckians organized the Louisville & Nashville Railroad, to build south from the falls of the Ohio. The connection was made at Chattanooga in February, 1854; that at Nashville five years later, just in time to complete that through line which made possible the devastating and conclusive victories of Sherman and so destroyed the last hope of Confederate independence.

The war ended. This railroad which by some inscrutable irony had been the major means of outflanking and crushing the South, was restored to its Southern owners. It is good in these dark times for railroads to see what the men of that day met, and with what success they conquered obstacles and ills such as we know not. I quote from the report of the President of the Nashville & Chattanooga Railroad, made early in 1867.

> "The affairs of the company were in deplorable condition,—in fact, verging on bankruptcy—without rolling stock to operate it except the meager supply saved from the ravages of war . . . Without machine shops or machinery, the road in bad order, the bridges worn out and unsafe, station houses destroyed, and those standing unfit for use, without tools, supplies or even furniture, even to a chair or table, or a sheet of paper that the company could call its own, and, worse than all, without a dollar in the treasury to commence operations, with a floating debt from coupons due on bonds and other debts contracted previous to and during the war of between six and seven hundred thousand dollars . . . without books or stationery, we had in many instances to keep accounts on loose paper . . . No money or credit . . ."

Had Confederate money or Confederate bonds been worth anything, that last would not have been true. The company had invested $922,000

in Confederate bonds and had, literally, barrels of Confederate money. Of United States money, however, it had none at all, while the government would return the property only upon condition that the company executed bond to repay the government within two years a million and a half dollars for equipment and betterments alleged to have been placed upon the property during the war, with interest at 7.3 per cent, and without credit to the railroad for the immense use to which the line had been put. There was no Finance Corporation in that Reconstruction period, or if there was it was not meant for ex-rebel railroads.

What did they do? The directors met, considered the report of their president and the circumstances of their desperate case, and then, in the language of that ancient report:

> "The directorate, although having a debt of five years' interest to pay, thought it best to go to work and earn the money and pay the interest and not increase the funded debt."

Which they did—and even, in time, were able to pay off their bond to the United States by borrowing the necessary amount from private sources at four per cent.

Those old controversies and conflicts are long since settled. For the span of a long life there has been internal peace in those States at least firmly united, but the need for railroads, supreme in that time of war, is no less today, whether in war or peace; while the sort of commercial courage shining through the pages of that old report of Reconstruction days has rarely been more needed than now.

Those men who set to work to rebuild the railroads of the Confederacy met obstacles almost inconceivably difficult. Railroad men of today, though they have no problem of restoring a war-wrecked plant, face the no less difficult commercial problem of staying alive and in business under a public economic policy which holds that the man who would use rail transport must himself, in the rate he pays, bear all the costs of the service he buys—not only operating costs, but capital costs of all sorts, and taxes besides; while the man who wishes to use other forms of transport must pay only a part and sometimes an insignificant part, of the total cost, the balance being buried and concealed in the tax burden.

Various other forms of transport have grown to find a large measure of economic usefulness and will continue to do so, but no one of them nor all of them together, can do for this great continental United States what its railroads have done, and are doing today, and must continue to do,—that is, to furnish, safely, securely, cheaply, the mass transport without which this country cannot live, whether in peace or in war.

Outline of Express History

An address delivered by G. H. Whittle, Assistant to President, Transportation Association of America, at a meeting of the Chicago Chapter of the Railway and Locomotive Historical Society, Palmer House, Chicago, April 17, 1936.

IT HAS been said that the history of a century might be reduced to a sentence—meaning, we must assume, that everything worthwhile that contributed during the century to the advancement of civilization, could be told in a very few words. It is doubtless true that the record of an individual, the history of a nation or of a basic industry could be so expressed, yet volumes have been written and many more could be compiled to chronicle the achievements of expressmen and to trace the origin and narrate the the growth of the express business in the United States, all of which could be reduced to the slogan "The Best There Is in Transportation." It should be remembered, however, that to run a reputation that justifies such a slogan, the untiring efforts and deep thought of a multitude of able men have been expended in perfecting a service, which today, challenges the administration of those engaged in the transportation field and which attracts the patronage of the shipping public.

The Express organization is typically American, nationwide in its scope, and performs a service in this country not rendered within the borders of any other nation. It should be stated, however, that the operations of the Express Agency are fast becoming international in their character and reach, through the latest method of transport, to the distant shores of other lands.

While the Express service was of humble origin, contradictory as it may appear, it was "high-hat" from its very inception as you will readily appreciate when it is known that the idea which was born in the brain of the original expressman to inaugurate a systematic package carrying business, was prompted by the sight of a high bell-crown hat worn by a driver on the Albany-Boston stage route.

You may be interested in a recital of the occurrence.

Nearly a century ago an enterprising and far-sighted young man, 27 years of age, diminutive in form and in delicate health, was an interested observer at the Boston office of the "Mail Line" one of whose stages had just arrived from Albany and was discharging its load of passengers. During this operation the stage driver removed from his monstrous high "bell-crown" hat letters and small parcels which had been intrusted to his care for delivery to Boston merchants.

This observing young man, ever alert to seize an opportunity, was quick to realize the necessity for a systematic package carrying business, and immediately conceived the idea which, in 1839, developed the first regular express service in the United States.

It is doubtful if Wm. Harnden, the original expressman, who saw his opportunity to establish a personal service in transportation and responded to it, ever in his wildest dreams had a vision of the wonderful growth of the enterprise which he founded. He builded better than he knew.

•Mr. Harnden advertised in the Boston and New York papers a personal service in the transportation and caring for parcels and money moving between the two cities, and in the performance of other special commissions. His established route was by rail from Boston to Providence, thence by boat to New York. Then, as now, the outstanding feature was that of personal service.

Although at first a carpet-bag sufficed to accommodate Harnden's business, the venture met with immediate success, so much so that he was forced to take on assistance, among whom was his brother, who lost his life and a shipment of $40,000 the following January through the burning of the Steamship "Lexington," on which he had taken passage from New York.

About this time the Cunard Line established service between Liverpool and Boston, and Harnden secured many packages arriving by steamer for transportation to New York and Philadelphia, to which latter place, as well as up the Hudson, he had extended his service.

Through his connection with the Cunard Line, Harnden became interested in extending his operations to Europe, particularly in the handling of remittances to prospective immigrants, and it is said he was instrumental in influencing no fewer than 100,000 persons to cast their lot in the new Republic.

Although the service of Harnden & Company was rapidly extended to the then growing "West," his express career was limited to less than six years, when his frail constitution fell prey to consumption, and he died in 1845, at the age of 33.

The business of Harnden & Company was not long without competition. Between 1840 and 1855 many other express companies were organized—in some cases by former stage-coach men or railroad employes, or by those who had been connected with one of the earlier express ventures. During this period there were organized no fewer than four such companies which were destined to occupy a place of importance in the subsequent development of the country.

Alvin Adams, a native of Vermont, started in the express business in 1840 in much the same manner as Harnden, with a carpet bag, and for several years his concern, known as Adams & Company, lived a precarious existence in its operations between Boston and New York. However, it began to reap some benefits when Harnden became engrossed in his European business. The service of Adams & Company was gradually extended to points in the South and to Pittsburgh, Cincinnati and Indianapolis. In 1854 the company was reorganized under the name of the Adams Express Company, absorbing at that time the firms of Harnden & Company and others. The Southern Express Company was an off-shoot of the Adams Company as a result of the Civil War.

In 1841 Henry Wells, who had been agent for Harnden & Company at Albany, with others, inaugurated an express service between Albany and Buffalo under the name of Pomeroy & Company. The trip at first was made once each week by a combination of railway train, stage coach and private conveyance. The distance of approximately 300 miles is now covered by the Twentieth Century Limited in eight hours. The service

was extended to New York and the firm's name was later changed to Livingston, Wells & Company.

The most interesting phase of the history of Pomeroy & Company was the letter-express which the firm established between New York and Buffalo in competition with the United States Government. The government's rate for carrying a letter between those points was 25 cents. The express company advertised to carry a letter for 6 cents, or to sell twenty stamps for $1.00. The Post Office Department did not adopt the use of stamps until 1845. Merchants and others along the line between New York and Buffalo passed resolutions to use the express exclusively until there was a reduction in the postal rates, and Wells made a proposition to the Post Office Department to take over the carrying of the mail of the entire country. At the next session of Congress the postal rates were reduced to one-quarter of the former charge.

In 1845, Mr. Wells, in conjunction with William G. Fargo and others, established an express service between Buffalo and Cincinnati and between Chicago and St. Louis, and shortly thereafter the name of the firm was changed to Livingston, Fargo and Company. As was usual, the express preceded the railroad in the development of the West, the service being transferred to the steam roads as they were completed.

The American Express Company was organized in 1850 by the consolidation of the firms of Livingston, Wells and Company, Livingston, Fargo & Company and Butterfield, Wasson & Company, the latter of which had established service on what is now the New York Central Lines.

Through the association of Henry Wells and William G. Fargo, the firm of Wells, Fargo & Company was established in California in 1852, and the history of this firm constitutes one of the most romantic chapters in American development. Offices of the company were rapidly established throughout the California frontier and became the channel through which the miners shipped their gold to San Francisco. The story of this period has been graphically portrayed by Bret Harte, who at one time was a shot-gun messenger for Wells, Fargo & Company.

In the extension of its service, Wells, Fargo & Company absorbed a number of the more important overland stage companies, including that which had operated the "Pony Express" from St. Joseph, Mo., to Sacramento, Calif., from April 1860, to October, 1862. The "Pony Express" was a daring experiment—2,000 miles on horseback through a wild, desolate region, overrun with hostile Indians. By this means the news of Lincoln's election was carried from the Missouri River to California in the record time of seven days and seventeen hours, as compared with the stage line's schedule of three weeks. The spirit of adventure afforded by this enterprise has been recorded by Mark Twain. It attracted many colorful characters of Western frontier days such as Buffalo Bill, Kit Carson and Wild Bill Hickok. The establishment of the trans-continental telegraph displaced the Pony Express.

The United States Express Company was organized in 1854 to operate over the lines of the Erie Railroad. It subsequently extended its service throughout the Eastern and Central States. Associated with its greatest development was Senator Thomas B. Platt of New York. This

company withdrew from active operation on July 1, 1914, following the establishment of the Parcel Post and the reduction in express rates ordered by the Interstate Commerce Commission.

The railway express service of the United States was placed under the jurisdiction of the Interstate Commerce Commission in 1906, but it was not until February 1, 1914, that any drastic action was taken affecting the industry. At that time, after an exhaustive study of the situation, the Commission prescribed a block system of express rates. The territory of the United States was divided into blocks measured by the degrees of latitude and longitude, each block approximately fifty miles square, and by a certain formula the Commission prescribed how much should be charged by the express companies from each block to every other block, on shipments weighing one to 100 pounds.

The reduction in the revenue of the express companies by this action was approximately 18 per cent. During the succeeding four years the remaining express companies suffered great financial losses and the dissipation of a large part of their surplus assets.

During the period of the World War several increases or adjustments in express rates were authorized by the Interstate Commerce Commission, but by no means in keeping with the increased cost of conducting the business by reason of war conditions and increases in wages of employes as prescribed by the United States Railroad Administration and subsequently by the United States Labor Board. In fact the express rates today stand only about 37 per cent higher than in 1931, whereas wages and living expenses have increased from 75 to 100 per cent.

With the outbreak of the World War in Europe in August, 1914, this country entered into a period of unusual expansion due to the manufacture of war materials, supplies and munitions for the countries at war, so that the express companies were operating under greatly decreased revenues and largely increased labor and operating costs.

These conditions were further accentuated when this country became involved in the world conflict in April, 1917, as a result of which many of express employes were gradually called to the colors. At the time the armistice was signed more than 20,000 express employes were in military and other government service. The places of these men were filled with inexperienced employes and largely with those rejected by the government.

By a proclamation of President Wilson the railroads of the country were taken over by the Government on January 1, 1918, and the Director General of the Railroads signified his willingness of entering into a contract for express service, if the then existing express companies would consolidate into one organization. Under this arrangement the American Railway Express Company came into existence, the old companies turning in their equipment, buildings and tangible assets for an equal amount of stock of the new company.

A contract was then signed with the Director General of Railroads, effective July 1, 1918, and under it the express service was unified without apparent confusion. However, bankruptcy facing the new company, the Director General of Railroads took it over on January 1, 1919, in

much the same manner as he had taken over the railroads, but with this important difference: he merely guaranteed the express company against loss in its operations, whereas with the railroads the Government had guaranteed an income equivalent to the average of the three preceding years.

The railroads and the express company were returned to private control on March 1, 1920, but they were afforded a further guarantee period of six months expiring September 1, 1920. Effective as of the latter date, and being authorized by the Interstate Commerce Commission to continue as a unified concern, the American Railway Express Company entered into a uniform contract with the various railroad lines of the United States for a continuation of the express service on what was practically a "cost-plus" basis. This arrangement continued until 1929.

During the period of the World War, Congress passed what was known as the Transportation Act, under which, to prevent interruption of interstate commerce, the United States Labor Board was established. The labor board continued to function until May 20, 1926, when it was supplanted by the provisions of the Railway Labor Act. During the regimes of the Railroad Administration and the Labor Board, various increases in wages were authorized and rules prescribed covering working conditions of express employes, all of which had the effect of adding materially to the company's operating costs.

During the period of the war, and by reason of the employment of inexperienced and oftentimes dishonest help, the losses and damages in the express service grew to be enormous, running at one time as high as $2,000,000 a month, and in general the service was not what it should have been. Prompt efforts were at once taken by the management to improve the morale of its organization by weeding out the undesirables, and as fast as former employes returned from military service they were re-employed.

The express business of the country is now handled by two companies—the Railway Express Agency and the Southeastern Express Company.

The former is a 100 per cent railroad-owned company, operating practically all the rail mileage of the country, except that of the Southern Railway and its affiliated lines, which are covered by the Southeastern Express Company.

The Railway Express Agency came into being March 1, 1929, as a result of the action of eighty-six Class I railroads. They found it necessary to conserve all the revenues that could be produced from the express traffic handled and, accordingly, purchased the property of the American Railway Express Company in order that all the returns from the business handled on their lines could be paid them without sharing any part of it with a private company, as the old contract with the American Railway Express Company guaranteed the latter 2½% of the net operating revenues with certain restrictions as to a maximum payment. In this connection, as long ago as 1912, the Interstate Commerce Commission had referred to this service as an agency of the railroads. The capital stock

of the new company was divided amongst these railroads in the ratio that the express traffic each had handled for a fixed period bore to the total.

Reverting to the early days of the express service, it will be recalled that its founder died in 1845 and it was in that year that those who "carried on"—extended the service to Chicago.

The slogan of the hardy pioneers of the early days was "Westward Ho" as they were alive to the possibilities of the ever-expanding frontier, and so pressed on to Chicago, which they envisioned as a city of destiny. Little did they sense, however, that Chicago would in less than a century, surpass the populous cities of the east and take its place as the fourth city of the world, and that the crude buildings of their day would give way to the gothic structures and stately sky-scrapers from whose towers beacon lights would guide swift moving airplanes in their flights from sunset to dawn.

In 1845 Henry Wells and Wm. G. Fargo operating under the title of Wells & Co., established the first express service in Chicago, reaching the city by a combination of steamboats and stage lines, as there were no railroad facilities then available west of Buffalo.

The Michigan Central Railroad was completed into Chicago in 1852 and the express service was transferred to that line from the stage and steamer. And as other steam roads were built, the C. & N. W. in 1848, the Rock Island and the Illinois Central in 1852, the C. B. & Q. in 1856, the Alton in 1862, the C. M. & St. P. in 1864, the Big 4 in 1865, and others later, the various companies successors to or competitors of Wells & Co., contracted with the railroads for the express privileges.

At the time of the Chicago fire in 1871, three of the old line express companies were doing business in the city; The American, an outgrowth of Wells & Co., and other companies that had been formed in the East. The Adams and the United States, and the representatives of all of these companies lent valuable assistance to relief organizations in the distribution of food and clothing, immediately following the great conflagration.

After the fire other express companies extended their operations to Chicago and did business here either continuously or for a period until the outbreak of the World War. In addition to those already mentioned were the Erie, Western, Pacific, Wells Fargo & Co. Express, Great Northern, National, Northern, and the B. & O. Express.

The representatives of the express companies in the early days were men of forceful character and outstanding ability whose names are familiar to old-time citizens who will recall the Fargos, the Wygants, Harvey D. Colvin, who while general agent of the United States Express, was mayor of Chicago, Joseph Shepard, O. W. Barrett, Anson Gorton, S. G. Seaton, E. A. Stedman, J. A. D. Vickers, A. Antisdel, G. B. Simpson, M. F. Berry (who originated the travelers check), H. K. Brooks (the inventor of the express money order), Geo. C. Taylor, formerly general agent of the American Express and later president of the American Railway Express Co., are but a few of those well known to the shipping public and all of whom were closely associated not only with the rapid expansion of the express business but also identified with forward movements for the upbuilding of Chicago.

Great changes have come since the death or retirement of these pioneers and today the express business in Chicago is done exclusively by one company, an organization owned by the railroads of the United States and managed by officials formerly connected with the various express companies that functioned prior to the World War when all companies were merged as already stated, by order of the United States government. The present company, the Railway Express Agency, Inc., which took over the operation in March, 1929, is giving the public an economical and efficient service. At the present time the operations in the Chicago department, which embraces the metropolitan area usually known as the Chicago switching district, are under the supervision of A. C. White, general manager, and the volume of traffic now moved as compared to that of the early days is an indication of the rapid strides Chicago has made as a distributing center.

The contrast is interesting. Within the memory of men now living wagons drawn by oxen were used to pickup and deliver all of the express shipments in Chicago. In 1856 the entire vehicle equipment consisted of one double and two single wagons and these served not only for pickup and delivery but for transfer of through express between the Chicago railroad terminals.

Today it requires 800 motor vehicles to perform this service and the daily transfer of through express from terminal to terminal is of sufficient volume to necessitate the use of motor trucks with a capacity equivalent to 2000 double wagon loads, in addition to 20 carloads that are switched around the city for direct transfer to connecting railroads. There is handled in and through Chicago about 20 per cent of the express traffic of the United States.

Ever alert to give the general public a more convenient method of making express shipments, the Railway Express Agency and the Western Union Telegraph Company entered into an agreement effective April 1, 1934, whereby all Western Union offices at points where the Railway Express Agency operates vehicle service will accept, pick-up, and collect express shipments. The Railway Express Agency makes pickup at stated intervals at Western Union offices and the Western Union delivers express shipments during the hours when messenger service for such deliveries is available.

Under the contract between the Railway Express Agency and the Western Union the latter may decline to pickup shipments in excess of twenty pounds, shipments valued at $250.00, shipments which will not permit safe or proper handling in its offices, or by messenger, and where shipment is to be picked up and delivered more than one mile from the nearest Western Union office. In case the Western Union declines a shipment the Railway Express Agency is immediately notified so that the patron may be served through the regular Railway Express channels.

The arrangement between the two organizations named for handling express shipments includes a payment by the Express Agency to the Western Union but the service rendered to the public is free of any charge in excess of the regular express rate.

While the foregoing rules represent agreements between the two companies, the Western Union stands to perform service for the public or the Railway Express Agency beyond the limitations of these rules where reasonable requests are made by the public or by the Railway Express Agency.

In order to accurately weigh express packages and in order that the necessary way-bills and forms could be completed at a Western Union office, the Railway Express Agency has furnished each Western Union office with the necessary scales.

Time of pick-ups at the Western Union offices by the Railway Express Agency vehicles is fixed for each office by the local express agency. Rush shipments to express terminals is accomplished either by the Western Union requesting by telephone the Railway Express Agency vehicle service or the Western Union taking the package direct by messenger to the terminal.

The Western Union without encroaching upon the already established business of the Railway Express Agency attempts through its sales representatives to call to the attention of patrons, this Railway Express Agency-Western Union joint service. The Western Union also advertises this service through its window displays and other advertising mediums.

In many cities the Western Union operates through a system of branch offices. This still further multiplies contact with the general public. In Chicago the Western Union is able to contact the general public through a system of 102 branch offices and its 700 messenger boys which are on the street and prepared to give this service as occasion arises.

The Western Union in Chicago maintains a system of approximately 26,000 call boxes with its patrons and is prepared to pick up Railway Express Agency packages in response to signals over this system.

One of the outstanding examples of the Western Union-Railway Express Agency set-up which involves a very human phase of commercial activity is the many urgent requests for serum throughout the country. The Michael Reese Hospital in Chicago upon receipt of a request to rush a serum shipment from Chicago calls the Western Union and such deliveries are made direct to the transportation terminals.

The latest method of transport employed by the Railway Express Agency is the airplane, and the Railway Express Agency-Western Union Service includes the pick-up of air express shipments.

The Air Express was inaugurated on September 1, 1927, and its growth has far surpassed the expectations of the Air Transport and Express Officials. During the early stages of the Air Express the service was restricted to the lines of a few of the major air transport companies operating exclusively in the United States.

On August 1, 1934, the Railway Express entered into contract with Pan-American Airways to act as express agents for the air line which serves the vast Continent of South America, Central America and the islands of the Caribbean. This arrangement gave to international shippers a simplified package transportation service between all the Americas which was three times faster than any previous method of transportation.

The co-ordination of the services of Railway Express with this international airline was a logical step, thus tying in the expedited rail and air express service in the United States with the thirty-three countries and colonies served by Pan American Airways.

On February 1, 1936, a unified air and air-rail service was inaugurated connecting every point in the United States.

The express agency has signed contracts with 20 of the 23 domestic air lines in the United States, together with Pan American Airways, for direct air express service with door-to-door pick-up and delivery for 215 cities in the United States and Canada, involving a population of 40,000,000, in addition to the 32 countries served by Pan American Airways. Through the combination of air and rail service, all of the 23,000 railway express offices become air express stations. The air service has recently been extended to the Philippine Islands.

At the present moment the planes that carry the air express are of the latest type and their speed can be calculated when it is known that the schedule time from Chicago to New York is four hours and fifteen minutes. From Los Angeles, California to Chicago twelve hours and six minutes—and that transcontinental flights are accomplished in sixteen hours and thirty minutes.

It is now possible for a shipper in New York City to dispatch a package by Air Express this evening and have it in the hands of his customer in Los Angeles at 9 o'clock tomorrow morning.

It is a far cry from the slow-moving stage coach that required 36 hours to negotiate the distance from Albany to Boston, to the swift moving airplane of today that spans the continent overnight.

Transportation is vital to the welfare of humanity, without it civilization would decline and mankind would revert to a primitive existence. Those familiar with the origin and development of the express business will concede that it is a method of transport, born of necessity and has been an important factor in the onward march of progress.

The word "Express" implies speed and from the beginning the express organizations have adopted the speediest means of transportation, and as the inventive genius of man evolves swifter means of transport, the express, to insure its existence, will be compelled to use such vehicles to provide the most expeditious service.

"Where there is no vision the people perish."

The dreams of yesterday become the realities of today and likewise the fantastic and almost unbelievable predictions of today may come true tomorrow; no one can prophesy what the future of the express business will be—but judging by the light of experience we can be sure, that it will, if privately operated, continue to meet the exacting requirements of this progressive nation, and, eventually girdle the earth.

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*NOTE: We are indebted to Mr. W. E. Beckner, General Manager of the Railway Express Agency, Cincinnati, Ohio, for much of the data concerning the early history of the Express Business.

Locomotives of the New Haven Railroad

By Chas. E. Fisher

BEFORE starting this series of locomotives, a word as to the purpose of these lists may not be amiss. Commencing in Bulletin No. 26 and continuing through Bulletin No. 38, save in our special publications, we reproduced the locomotives of the Boston & Maine R. R. Our reason for reproducing that material was to pay tribute to the late Herbert P. Yeaton, one of our former members, for the years of time and patient study expended in preparing this material years ago. Access to the file of reports in the Baker Library was the means of making some corrections and revisions. Probably no prints of locomotives of the early engines of the Boston & Maine and its subsidiary lines were more eagerly sought by the collector of from twenty to twenty-five years ago. Probably the number is greater than any of our New England roads. For this reason, in addition to the tribute to Mr. Yeaton, we felt that this material deserved to be recorded in our magazine. It is probably the most accurate list which can be presented at this late day.

The presenting of this New Haven material has been made possible only by the efforts of my companion worker—Mr. C. B. Burr. Through the kindness of the officials of the New Haven R. R., especially Mr. George A. Merrick, access to consult certain records has been granted. This list has been in preparation for nearly ten years. One thing should be made clear to the reader—in the matter of locomotives constructed by the road—the author has credited new construction wherever the records have indicated new locomotive mileage or where a new boiler was accompanied by a general rebuilding. As will be found, the shops of this road built many new locomotives.

Other items of note deserve mention. The reason the Rogers locomotives were selected was due to the fact that Thomas Rogers was a native son of the State of Connecticut, moreover they were in service on the old Housatonic R. R. and were well spoken of and an easy delivery could be effected from Paterson, N. J. When the Rogers Works were unable to supply the road with locomotives during the Civil War, on account of work for the United States Government, a genuine note of regret is voiced in the Annual Reports of this company.

One thing which may strike our members as peculiar is the rapid replacement of some of the early locomotives. These engines were ordered by Mr. R. B. Mason, the engineer who built the New York & New Haven R. R. At the time the order was placed, Mr. Mason believed these engines of ample capacity for some time, but so rapidly did the traffic increase that larger engines had to be ordered. Some of these small engines went to the Illinois Central R. R. with Mr. Mason when he was engaged to supervise the construction of that road and others found service on some of the other Connecticut roads. This list is entirely new material and should be of interest to many of our members. The photographs selected to accompany this roster will give you not only an idea of the locomotives but of the equipment, if it is possible.

The New York, New Haven & Hartford R. R. was formed by the consolidation of the New York & New Haven and Hartford & New Haven Railroads. Of these two, the Hartford & New Haven R. R. was the older, being incorporated in the State of Connecticut on May 29th, 1833 to build a railroad from Belle Dock (New Haven) to Hartford. The road was opened between these two points in December 1839. The Hartford & Springfield R. R., chartered to connect these two cities in both states, became a part of the Hartford & New Haven R. R. on May 10, 1847 and thus the Hartford & New Haven R. R. secured an entrance to that thriving city of Springfield, Massachusetts. Control of the Windsor Locks & Suffield R. R.; Middletown R. R. and New Britain & Middletown R. R. were later acquired. With the frequent steamboat service in Long Island Sound, between New Haven and New York, this road was very strategically located.

The New York & New Haven R. R. was incorporated on June 7th, 1844, to build a railroad from New Haven, Connecticut to the west line of the State of Connecticut, towards the city of New York. In 1846 the Legislature of the State of New York passed an act authorizing the New York & New Haven R. R. to extend the road from the western boundary of the State of Connecticut to connect with the line of the New York & Harlem R. R. at or near William's Bridge, in the State of New York. In 1848 the Legislature of New York authorized the New York & New Haven R. R. to run its cars over the tracks of the New York & Harlem R. R., from the point of junction to New York, upon such terms as the two companies might agree. The road was opened for service on December 29th, 1848. The New Haven & Northampton R. R., known as the Canal road, extending from New Haven to Granby, Ct. was leased by the New York & New Haven R. R. for twenty (20) years, commencing July 1, 1849. When the lease expired, the New York & New Haven R. R. relinquished their operation. The New Haven, New London & Stonington R. R. combining in 1864 with the New London & Stonington R. R. to form the Shore Line R. R., sold that portion of their line that year between New London and Stonington to the New York, Providence & Boston R. R., and the balance of the road between New Haven and New London was leased to the New York & New Haven R. R. on Nov. 1, 1870.

On August 6th, 1872, the New York & New Haven and the Hartford & New Haven roads were consolidated to form the present New York, New Haven & Hartford R. R. The line extended from Woodlawn, the junction with the New York & Harlem R. R. to New London, Connecticut, a distance of about 112 miles and from New Haven to Springfield, Mass., a distance of 62 miles, together with the branch lines.

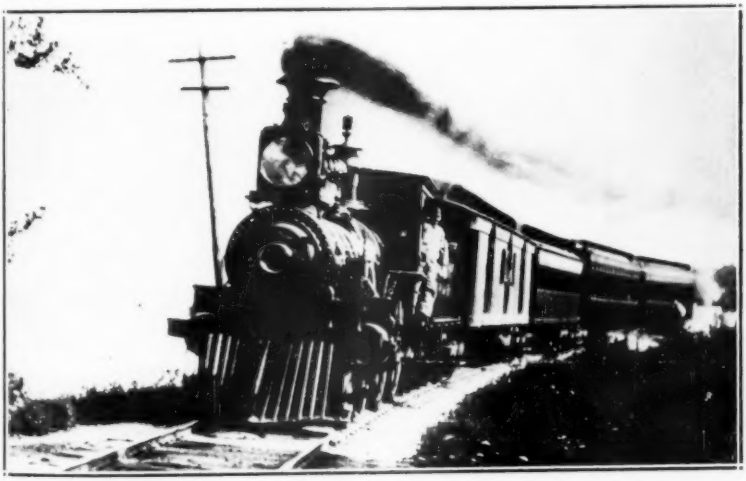
Before listing the locomotives of these two roads, it may be of interest to note that the locomotives of the New York & New Haven R. R. never bore any names, something unusual for that period. They were typical Rogers machines, but the absence of running boards and hand rails always distinguished them from those on other roads. The locomotives of the Hartford & New Haven R. R. did carry names and, in the sixties with their trim Ionic stacks, painted scarlet and with the brass work on the engine, were handsome machines. Locomotives of their own pattern

were built in their shops at Hartford and their ideas predominated after the consolidation of the two roads.

In 1904, all locomotives of the N. Y. N. H. & H. were renumbered and classified into groups and this system of renumbering is still in effect to date. The locomotives of the Central New England R. R., at the time of this renumbering, occupied the series from 1-199 and in later years these have been included in the New Haven series. All electric locomotives carry the numeral "0" prefixed to their number so that there has never been any confusion between the steam and electric numbers. These electric engines will not be considered in this list of locomotives

1	Rogers K & G	# 120	2-18-1848	13x20"	72"	4-4-0	Sold to Ill. Cent.
1	Rogers K & G	# 338	9-14-1852	15x20"	66"	4-4-0	
1	New Haven Shops		10-21-1876	15x22"	66"	4-4-0	
1	Hartford Shops		1896	18x24"	48"	0-6-0	Re 2541, Sc 10-16-26
2	Rogers K & G	# 121	2-26-1848	13x20"	72"	4-4-0	Sold to Ill. Cent.
2	Rogers K & G	# 341	9-24-1852	15x20"	66"	4-4-0	
2	New Haven Shops		4-23-1877	15x22"	60"	4-4-0	
2	Rhode Island	#1372	1884	17x24"	52"	4-4-0	MW&C #1; NY&NE #198; Renumbered 1898, Sc 12-31-15
3	Rogers K & G	# 122	3-14-1848	13x20"	72"	4-4-0	
3	Rogers	#1003	7-10-1861	15x22"	66"	4-4-0	
3	New Haven Shops		1883	15x22"	66"	4-4-0	
3	Norwood Shops		1904	18x24"	45"	0-6-0	Re 2523; Sc 9-30-27
4	Rogers K & G	# 123	3-21-1848	13x20"	72"	4-4-0	
4	Rogers	#1004	8- 7-1861	15x22"	66"	4-4-0	
4	New Haven Shops		1884	15x22"	66"	4-4-0	Re 2049; Sc 1-1905
5	Rogers K & G	# 145	9-28-1848	13x20"	60"	4-4-0	
5	Rogers K & G	# 115	12-24-1847	10x20"	60"		From NH&N "Cheshire"
5	Danforth & Cooke		1863	15x22"	66"	4-4-0	Rebuilt
	New Haven Shops		1872	17x22"	74"	4-4-0	Re 1949; Sc 1-1905
6	Rogers K & G	# 147	10-12-1848	13x20"	72"	4-4-0	Sold to NHNL&S and named "Branford"
6	Danforth & Cooke		1865	15x22"	56"	4-4-0	Rebuilt
	New Haven Shops		1873	17x22"	74"	4-4-0	
6	New Haven Shops		1901	18x26"	69"	4-4-0	Re 1509; Sc 1-13-27
7	Rogers K & G	# 148	10-21-1848	13x20"	72"	4-4-0	
7	Danforth & Cooke		7- 1864	15x22"	56"	4-4-0	Rebuilt
	New Haven Shops		1884	16x22"	69"	4-4-0	
7	New Haven Shops		1900	18x24"	69"	4-4-0	Re 1610; Sc 4-19-25
8	Rogers K & G	#149	10-30-1848	13x20"	72"	4-4-0	
8	Danforth & Cooke		7- 1864	15x22"	56"	4-4-0	Rebuilt
	New Haven Shops		4-23-1872	16x22"	69"	4-4-0	Re 2045; Sc 1-1905
9	Rogers K & G	# 153	12-11-1848	13x20"	60"	4-4-0	
9	Rogers	#1037	10-20-1862	15x22"	66"	4-4-0	Rebuilt
	New Haven Shops		1874	15x22"	69"	4-4-0	
10	Rogers K & G	#170	5- 5-1849	13x20"	60"	4-4-0	Sold, Shore Line R R "Madison"
10	New Haven Shops		1868	15x22"	62"	4-4-0	
10	Schenectady		1913	22x28"	51"	0-8-0	CNE #10
11	Rogers K & G	#184	8- 9-1849	13x20"	72"	4-4-0	
11	Danforth & Cooke		2- 3-1864	?	?	4-4-0	Rebuilt
	New Haven Shops		1872	16x22"	69"	4-4-0	
11	New Haven Shops		1900	18x24"	69"	4-4-0	Re 1611; Sc 8-31-25
11	Schenectady		1913	22x28"	51"	0-8-0	CNE #11
12	Rogers K & G	# 205	2-20-1850	14x20"	66"	4-4-0	Rebuilt
	New Haven Shops		1879	14x22"	57"	4-4-0	

N. Y. N. H. & H. #5. Danforth & Cooke, 1863. Rebuilt, 1872.

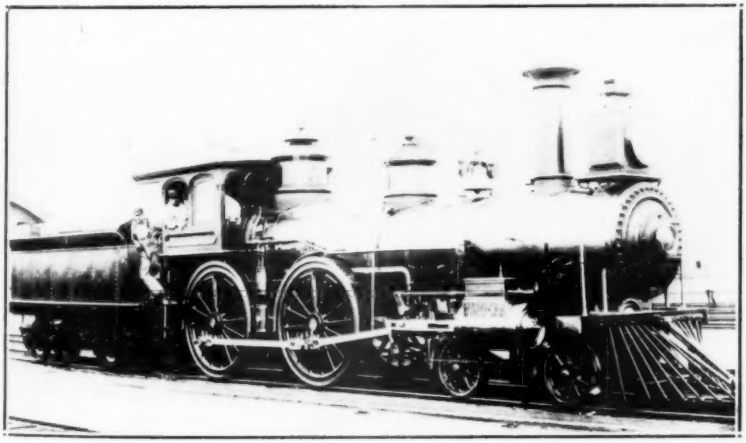


N. Y. N. H. & H. #16. Rogers, 1872.

N. Y. N. H. & H. #21. New Haven Shops, 1885.

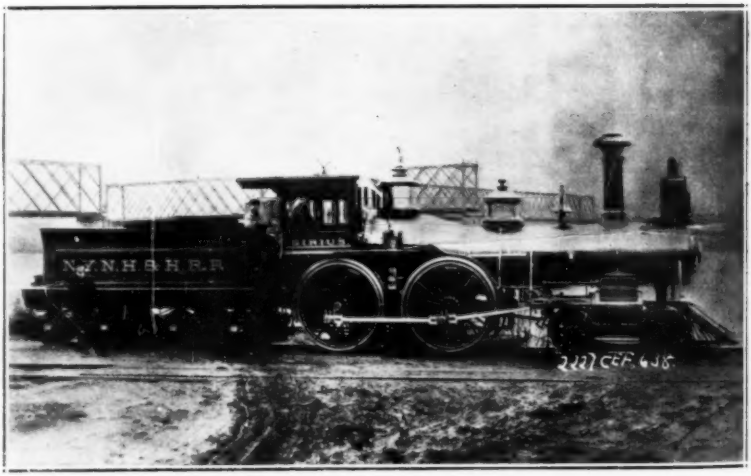
N. Y. N. H. & H. #26. Grant, 1868.

N. Y. N. H. & H. #33. Rogers, 1867. Rebuilt, 1881.



N. Y. N. H. & H. #39. New Haven Shops, 1876.

N. Y. N. H. & H. #78. New Haven Shops, 1893.



N. Y. N. H. & H. "Sirius" #81. H. & N. H., 1870.

12	Rhode Island	#2881		1893	18x24″	45″	0-6-0 Re 2551; Sc 4-30-26
12	Schenectady			1913	22x28″	51″	0-8-0 CNE #12
13	Rogers K & G	# 206	2-27-1850		14x20″	66″	4-4-0 Rebuilt
	New Haven Shops			1875	14x22″	57″	4-4-0
13	Rhode Island	#2365		1891	18x24″	56″	4-6-0 Re 904; Sc 1-16-21
14	Rogers K & G	# 215	5-25-1850		13x20″	72″	4-4-0 Rebuilt
	New Haven Shops			1864	?	?	4-4-0
14	Rogers			7-29-1872	15x22″	66″	4-4-0
14	Rhode Island			1886	16x20″	51″	0-4-0 MW&C #2; NY&NE #199; Re 2826; Sc 1-29-14
15	Rogers K & G	# 216	6-10-1850		13x20″	72″	4-4-0
15	New Haven Shops			1868	17x22″	62″	4-4-0 Sold—SI &N #5
15	New Haven Shops			1901	18x24″	45″	0-6-0 Re 2536; Sc 1-1925
16	Rogers K & G	# 218	6-27-1850		13x20″	72″	4-4-0
16	Rogers			8- 3-1872	15x22″	66″	4-4-0
16	Pittsburgh			1903	18x24″	56″	0-6-0 Re 2520; Sc 3-1925
17	Rogers K & G	# 220	7-26-1850		13x20″	72″	4-4-0
17	Danforth & Cooke			2- 1864	16x22″	69″	4-4-0 Rebuilt
	New Haven Shops			1873	16x22″	69″	4-4-0
17	Hartford Shops			1891	18x24″	69″	4-4-0 Re 1749; Sc 8-18-19
18	Rogers K & G	# 222	8- 2-1850		13x20″	72″	4-4-0 Rebuilt
	New Haven Shops			1863			
18	Rogers K & G	# 319	5-24-1852		14x20″	72″	4-4-0 Formerly #43
18	New Haven Shops			7- 2-1877	18x24″	62″	4-4-0
18	New Haven Shops			1903	18x24″	63″	4-4-0 Re 1782; Sc 1-20-19
19	Rogers K & G	# 225	9-10-1850		13x20″	72″	4-4-0 Rebuilt
	New Haven Shops			1855	15x22″	72″	4-4-0
19	New Haven Shops			5-30-1876	16x22″	66″	4-4-0
20	Rogers K & G	# 246	2- 6-1851		13x20″	72″	4-4-0 Rebuilt
	New Haven Shops			5-22-1869	13x20″	54″	4-4-0
20	Rhode Island	#2366		1891	18x24″	56″	4-6-0 Re 905; Sc 10-28-21
21	Rogers K & G	# 249	2-18-1851		13x20″	72″	4-4-0 Sold
21	Rogers K & G	# 393	5-19-1853		16x22″	72″	4-4-0
21	New Haven Shops			1885	18x22″	68″	4-4-0 Re 1770; Sc 2-1917
22	Rogers K & G	# 395	5-27-1853		16x22″	72″	4-4-0
22	New Haven Shops			1878	18x24″	66″	4-4-0 Re 1797; Sc 8-18-19
23	Rogers K & G	# 431	10-24-1853		16x22″	72″	4-4-0
23	Grant			1868	17x22″	62″	4-4-0
23	Hartford Shops			1899	17x24″	69″	4-4-0 Re 1802; Sc 10-16-26
24	Rogers K & G	# 433	10-29-1853		16x22″	72″	4-4-0
24	New Haven Shops			8-28-1879	18x24″	62″	4-4-0
24	New Haven Shops			1903	18x26″	69″	4-4-0 Re 1780; Sc 5-8-17
25	Rogers K & G	# 494	5-31-1854		16x22″	72″	4-4-0
25	New Haven Shops			5- 3-1879	18x24″	66″	4-4-0 Re 1792; Sc 11-13-07
26	Rogers K & G	# 496	6- 9-1854		16x22″	72″	4-4-0
26	Grant			1868	17x22″	62″	4-4-0
26	New Haven Shops			1903	18x26″	69″	4-4-0 Re 1506 Sold to CNE #46; Sc 1926
27	Rogers	# 717	12-12-1856		16x22″	72″	4-4-0
27	New Haven Shops			1887	19x24″	56″	2-6-0 Re 632; Sc 5-23-24
28	Mason	# 76	12-30-1857		15x22″	60″	4-4-0
28	New Haven Shops		11- 2-1870		16x24″	66″	4-4-0
28	New Haven Shops			1901	18x24″	69″	4-4-0 Re 1510
29	Taunton	# 241		1857	16x24″	66″	4-4-0 Exploded—1866
29	Danforth & Cooke			1867	16x22″	69″	4-4-0
29	New Haven Shops			1900	18x24″	69″	4-4-0 Re 1612; Sc 4-1925
30	Rogers	# 907	3-27-1860		16x24″	66″	4-4-0
30	Rhode Island	#2363		1891	18x24″	56″	4-6-0 Re 906; Sc 6-10-23
31	Rogers	# 994	3-15-1861		15x22″	66″	4-4-0 Rebuilt
	New Haven Shops			1873			
31	New Haven Shops			1900	18x24″	69″	4-4-0 Re 1613; Sc 5-31-25
32	Rogers	# 995	3-21-1861		15x22″	66″	4-4-0 Rebuilt

	New Haven Shops			1874	15x22″	62″	4-4-0 Sc 1903
33	Rogers			1-18-1867	17x22″	54″	4-4-0 Rebuilt
	New Haven Shops			1881	18x24″	74″	4-4-0
33	New Haven Shops			1901	18x26″	69″	4-4-0 Re 1511; Sc 2-29-28
34	Rogers			8-25-1868	17x22″	69″	4-4-0
34	New Haven Shops			1898	18x24″	69″	4-4-0 Re 1618; Sc 4-1925
35	Rogers			8-31-1868	17x22″	69″	4-4-0 Rebuilt
	New Haven Shops			1885			
35	South Boston Shops			1897	17x24″	69″	4-4-0 Re 1821; Sc 8-18-19
36	Rogers			1-25-1869	13½x22″	60″	2-4-2 Forney—rebuilt
	New Haven Shops			1875	14x22″	62″	0-4-0
36	Rhode Island	‡	3026	1894	18x24″	45″	0-6-0 Re 2546; Sc 1932
37	Rogers			8- 7-1869	17x22″	62″	4-4-0
37	New Haven Shops			1899	18x24″	69″	4-4-0 Re 1614; Sc 5-31-25
38	Rogers K & G	‡	170	5- 5-1849	13x20″	60″	4-4-0 Shore Line "Madison"
38	Rogers K & G	‡	320	5-24-1852	14x20″	72″	4-4-0 Shore Line "Saybrook"
38	New Haven Shops			1878	18x24″	62″	4-4-0 Re 1781; Sc 5-8-17
39	Rogers K & G	‡	306	3-11-1852	14x20″	72″	4-4-0 Shore Line "New London"
39	New Haven Shops			3- 8-1876	17x22″	69″	4-4-0 Re 1948; Sc 10-11-12
40	Rogers K & G	‡	305	3-11-1852	14x20″	50″	4-4-0 Shore Line "Lyme" Rebuilt
	New Haven Shops			1-30-1872	14x20″	50″	4-4-0
40	New Haven Shops			1896	18x24″	45″	0-6-0 Re 2540
41	?			——	14x20″	50″	4-4-0 Shore Line ‡4 Rebuilt
	New Haven Shops			3-14-1872	14x20″	50″	4-4-0 Rebuilt
	New Haven Shops			10-28-1880	14x20″	50″	0-4-0
41	Rhode Island	‡	29359	3- 1904	19x26″	57″	4-6-0 Re 950
42	Rogers K & G	‡	320	5-24-1852	14x20″	72″	4-4-0 Shore Line "Saybrook" Re 38
42	New Haven Shops			10- 7-1873	17x22″	69″	4-4-0
42	Hartford Shops			1897	17x24″	69″	4-4-0 Re 1807; Sc 6-1-23
43	Rogers K & G	‡	319	5-24-1852	14x20″	72″	4-4-0 Shore Line "Guilford" Renumbered 18
43	New Haven Shops			1872	17x22″	69″	4-4-0
43	South Boston Shops			1897	17x24″	69″	4-4-0 Re 1822; Sc 11-30-19
44	Rogers K & G	‡	147	10-12-1848	12x20″	60″	4-4-0 Shore Line "Branford"; Sold New Haven & Derby R R
44	New Haven Shops			2- 8-1873	17x22″	69″	4-4-0
44	South Boston Shops			1897	17x24″	69″	4-4-0 Re 1823; Sc 1-20-19
45	Rogers	‡	494	7-14-1864	14x22″	66″	4-4-0 Shore Line "Westbrook"—Rebuilt
	New Haven Shops			1873	14x22″	66″	4-4-0
45	New Haven Shops			1899	18x24″	69″	4-4-0 Re 1615; Sc 5-31-26
46	Rogers	‡	237	4-30-1860	14x22″	66″	4-4-0 Shore Line "Madison"; Rebuilt
	New Haven Shops			1872	15x22″	66″	4-4-0
46	New Haven Shops			1899	18x24″	69″	4-4-0 Re 1616; Sc 7-1-25
47	Rogers			7-10-1868	15x22″	66″	4-4-0 Shore Line R R ‡10 Rebuilt
	New Haven Shops			1875			
47	Rhode Island			3- 1904	19x26″	57″	4-6-0 Re 951; Sc 11-30-27
48	Rogers			4-21-1871	17x22″	66″	4-4-0
48	South Boston Shops			1897	17x24″	69″	4-4-0 Re 1824; Sc 8-18-19
49	Rogers			4-27-1871	17x22″	66″	4-4-0
49	New Haven Shops			1898	18x24″	69″	4-4-0 Re 1619; Sc 7-31-25
50	New Haven Shops			10- 2-1871	17x22″	69″	4-4-0
50	New Haven Shops			1909	20x26″	69″	4-6-0 Ex CNE ‡50; Sc 3-1928

The first fifty (50) engines of the above series, concludes those which came from the New York & New Haven R. R. up to the time of the consolidation and they still retained their original numbers upon the formation of the New York, New Haven & Hartford R. R. For a moment we may consider the locomotives of two roads which were controlled by the New York & New Haven R. R. The first of these is the New Haven & Northampton R. R., known as the Canal Road. We know that there were three locomotives built for this road:

"Cheshire"	Rogers K & G	#115	12-24-1847	10x20″	60″
"Bristol"	Rogers K & G	#117	1-15-1848	12½x20″	60″
"Farmington"	Rogers K & G	#118	1-21-1848	12x20″	60″

Save for the fact that we firmly believe that the "Cheshire", for a short time became the 2nd #5, the other two engines were probably sold by the New York & New Haven R. R. to some other road which could use this very light power as reports indicate they were all single driving wheel engines. There is a report that there was an engine named the "West Haven", about as big as a "teakettle" which performed switching service in the New Haven yards. Whether this was one of the Canal engines or one of the older New Haven engines dubbed with this appellation, we don't know. At any rate, the Canal Road was worked by the locomotives of the N. Y. & N. H. R. R. until the lease expired—1869.

The other road is the Shore Line R. R. So far as we can determine the following engines were in service on this road:

1 "Madison"	Rogers K & G	#170	5- 5-1849	13x20″	60″	Purchased from NY& NH #10 — renamed "Clinton"
2 "New London"	Rogers K & G	#306	3-11-1852	14x20″	66″	
3 "Lyme"	Rogers K & G	#305	3-11-1852	14x20″	66″	
4 "New Haven"	?	?	?	?	?	
5 "Saybrook"	Rogers K & G	#320	5-24-1852	14x20″	72″	
6 "Guilford"	Rogers K & G	#319	5-24-1852	14x20″	72″	
7 "Branford"	Rogers K & G	#147	10-12-1848	12x20″	60″	Purchased from NY& NH #6
8 "Westbrook"	Rogers	#494	7-14-1864	14x22″	66″	
9 "Madison"	Rogers	#237	4-30-1860	14x22″	66″	
10 ———	Rogers	—	7-10-1868	15x22″	66″	

These engines which came into the New Haven roster have been indicated in their proper places.

Turning now to the Hartford & New Haven R. R., we have a record of six engines, which so far as we can discover, never bore a number on that road.

"Charter Oak"	Rogers K & G	# 6	10-13-1838			
"Quinipiac"	Rogers K & G	# 9	1- 6-1839			
"New Haven"	Rogers K & G	# 20	2-29-1840			
"Meriden"	M W Baldwin	#167	11-13-1841			
"Windsor"	M W Baldwin	#121	11-12-1844	13½x18″	60″	4-4-0
"Enfield"	Rogers K & G	# 61	11-21-1844	12x20″	60″	4-4-0

The "Enfield" was ordered by the Hartford & Springfield R. R. In common with other roads, the Hartford & New Haven R. R. locomotives were named, later numbered. Upon consolidation with the New York & New Haven R. R., fifty (50) was added to the number of each Hartford & New Haven locomotive number.

1	Juno	H & N H R R			1869	14x22″	66″	4-4-0	
51	Rebuilt	N Y N H & H				14x22″	63″	4-4-0	
51		Rhode Island			1904	19x26″	57″	4-6-0	Re 952 Sc 8-1927
51		Schenectady			1909	20x26″	69″	4-6-0	Ex CNE #51 Sc 3-1928
2	Aries	H & N H R R			1869	12x20″	42″	0-4-0	
52	Rebuilt	N Y N H & H				12x22″	40″	0-4-0	Re 2915 Sc 12-1905
52		Schenectady			1909	20x26″	69″	4-6-0	Ex CNE #52 Sc 3-1928
3	Red Bird	H & N H R R			1855	14x20″	66″	4-4-0	
53	Rebuilt					15x22″	63″	4-4-0	
53		Rhode Island	#2368		1891	18x24″	56″	4-6-0	Re 907 Sc 1-31-22
4	F T Stanley	H & N H R R			1864	14x20″	54″	4-4-0	
54	Rebuilt	N Y N H & H				12x20″	40″	4-4-0	
54		Rome	# 619		1890	18x24″	45″	0-6-0	Re 2595 Sc 6-10-23
5	Hartford	H & N H R R			1869	14x22″	66″	4-4-0	
55	Rebuilt	N Y N H & H				14x18″	63″	4-4-0	
55		Rhode Island	#2369		1891	18x24″	56″	4-6-0	Re 908 Sc 1-31-22
6	Berlin	Rogers K & G	# 72	9-11-1845		11½x18″	60″	4-4-0	
56	Rebuilt	H & N H R R							
56		Hartford Shops			1877	16x22″	68″	4-4-0	Re 2043 Sc 4-2-07
7	Springfield	Rogers K & G	# 73	9-26-1845		11½x18″	60″	4-4-0	
57	Rebuilt	Hartford Shops			1874	12x18″	63″	4-4-0	
57		Rhode Island	#2370		1891	18x24″	56″	4-6-0	Re 909 Sc 6-1923
8	Connecticut	Rogers K & G	# 112	11- 1-1847		13½x20″	60″	4-4-0	
58	Rebuilt	H & N H R R							
58		Hartford Shops			1885	16x22″	48″	0-6-0	Re 2712 Sc 1-15-10
9	Massachusetts	Rogers K & G	# 114	12-20-1847		13x20″	44″	4-4-0	
59	Rebuilt	H & N H R R							
59		Hartford Shops			1887	16x22″	42″	0-6-0	Re 2710 Sc 4-14-14
10	New York	Rogers K & G	#1128	5-16-1848		14x20″	60″	4-4-0	
60	Rebuilt	N Y N H & H			1875				
60		Rhode Island	#29362		1904	19x26″	57″	4-6-0	Re 953 Sc 11-30-27
11	Wallingford	Rogers K & G	# 269	7-17-1851		15x20″	54″	4-4-0	
61		H & N H R R			1857	16x20″	54″	4-4-0	
61		Rhode Island	#2743		1892	18x24″	45″	0-6-0	Re 2558 Sc 12-18-23
12	Gov. Seymour	Rogers K & G	# 362	12-28-1852		15x20″	60″	4-4-0	
62	Rebuilt	H & N H R R							
62		Rhode Island	#2744		1892	18x24″	45″	0-6-0	Re 2559 Sc 12-29-26
13	Victory	Rogers K & G	# 217	6-21-1850		15x20″	72″	4-4-0	
63	Rebuilt	Hartford Shops			1877				
63		Hartford Shops			1898	17x24″	69″	4-4-0	Re 1804 Sc 6-1-23

14 Elisha Peck	Rogers K & G	# 322	6-10-1852	15x20″	72″	4-4-0		
64 Rebuilt	Hartford Shops		1878	15x22″	68″	4-4-0		
64	Rhode Island	#29363	1904	19x26″	57″	4-6-0	Re 954	
							Sc 10-16-26	
15 G. F. Pond	H & N H R R		——	?	?	4-4-0		
65 Rebuilt	Hartford Shops		1876	16x22″	63″	4-4-0		
16 Uranus	H & N H R R		1865	15x22″	54″	4-4-0		
66 Rebuilt	Hartford Shops							
66	Rhode Island	#2745	1892	18x24″	45″	0-6-0	Re 2560	
							Sc 6-10-23	
17 Orion	Mason	# 5	3- 7-1854	15x22″	60″	4-4-0	Rebuilt	
	Mason	# 131	5- 6-1863	15x22″	68″	4-4-0		
67 Rebuilt	Hartford Shops		1899	16x22″	45″	0-4-0	Re 2824	
							Sc 2-1925	
18 Hercules	H & N H R R		——	?	?	4-4-0		
68 Rebuilt	Hartford Shops		1879	17x22″	63″	4-4-0	Expl 1897	
68	Hartford Shops		1897	17x24″	69″	4-4-0	Re 1808	
							Sc 6-10-23	
19 Vulcan	Danforth & Cooke		1861	16x22″	63″	4-4-0		
69 Rebuilt	Hartford Shops							
69	Rhode Island	#2742	1892	19x24″	57″	2-6-0	Re 630	
							Sc 7-31-25	
20 Flying Dragon	Rogers	# 355	9-29-1862	15x22″	66″	4-4-0		
70						4-4-0	Sc 1891	
70	Rhode Island	#2746	1892	18x24″	45″	0-6-0	Re 2561	
							Sc 12-31-25	
21 Stag	H & N H R R		1862	15x22″	63″	4-4-0		
71						4-4-0	Sc 1891	
71	Rhode Island	#2747	1892	18x24″	45″	0-6-0	Re 2562	
							Sc 7-2-23	
22 Neptune	H & N H R R		1863	12x22″	40″	0-4-0		
72						0-4-0	Sc 1893	
72	Rhode Island	#3024	1894	18x24″	45″	0-6-0	Re 2547	
23 Jupiter	Taunton	# 313	1864	14x22″	63″	4-4-0		
73						0-4-0	Sc 1898	
73	Rome	# 620	1890	18x24″	45″	0-6-0	Re 2596	
							Sc 6-10-23	
24 Comet	H & N H R R		8- -1864	15x22″	68″	4-4-0		
74						4-4-0	Sc 1892	
74	Rhode Island	#2882	1893	18x24″	45″	0-6-0	Re 2552	
							Sc 7-31-25	
25 Planet	H & N H R R		2- -1866	15x22″	69″	4-4-0		
75						4-4-0	Sc 1884	
75	Hartford Shops		1885	17x22″	68″	4-4-0	Re 1904	
							Sc 10-24-13	
26 Taurus	H & N H R R		2- -1867	12x20″	40″	0-4-0		
76						0-4-0	Sc 1893	
76	Rhode Island	#3025	1894	18x24″	45″	0-6-0	Re 2548	
							Sc 10-16-26	
27 Saturn	H & N H R R		1867	15x22″	68″	4-4-0		
77						4-4-0	Sc 1892	
77	Rhode Island	#2884	1893	18x24″	45″	0-6-0	Re 2553	
							Sc 10-23-23	
28 Mars	Rhode Island	# 23	5- -1867	16x24″	60″	4-4-0		
78						4-4-0	Sc 1892	
78	New Haven Shops		1893	19x24″	69″	4-4-0	Re 1414	
							Sc 4-30-26	
29 Vesta	H & N H R R		1867	16x22″	63″	4-4-0		
79						4-4-0	Sc 1890	
79	Hartford Shops		1891	18x22″	63″	4-4-0	Re 1746	
							Sc 11-20-19	
30 Mercury	H & N H R R		1868	15x22″	68″	4-4-0		

80							4-4-0	Sc 1897
80		Hartford Shops		1898	16x22″	63″	4-4-0	Re 2046
								Sc 1-5-06
31	Sirius	H & N H R R		1870	14x20″	68″	4-4-0	
81							4-4-0	Re 2051
								Sc 9-11-06
32	Polaris	H & N H R R		1871	16x22″	68″	4-4-0	
82							4-4-0	Sc 1903
33	Andromeda	Baldwin	#2518	8- 9-1871	17x24″	54″	4-6-0	
83	Rebuilt	N Y N H & H		1890			4-6-0	
83	Rebuilt	Hartford Shops		1901	17x24″	56″	4-6-0	Re 931
								Sc 11-20-19
34	Leo	H & N H R R		1872	12x22″	50″	0-4-0	
84							0-4-0	Re 2916
								Sc 4-26-07
35	Regulus	H & N H R R		1872	18x22″	54″	4-6-0	
85	Rebuilt	Hartford Shops		1892	19x22″	54″	4-6-0	Re 920
								Sc 9-26-05
36	Perseus	Baldwin		1872	18x24″	54″	4-6-0	
86	Rebuilt	N Y N H & H		1888	18x24″	56″	4-6-0	Re 930
								Sc 11-20-19
37	Pegasus	H & N H R R		1872	16x22″	69″	4-4-0	
87	Rebuilt	N Y N H & H		1883	16x22″	68″	4-4-0	Sc 1898
87		Hartford Shops		1899	17x24″	69″	4-4-0	Re 1803
								Sc 10-16-26
38	Eclipse	H & N H R R		1873	17x22″	68″	4-4-0	
88							4-4-0	Sc 1895
88		Rhode Island		1896	17x22″	63″	4-4-0	Re 1952
								Sc 1-20-19
39	Atalanta	H & N H R R		1873	17x22″	68″	4-4-0	
89							4-4-0	Sc 1902

The above concludes the engines of the Hartford & New Haven R. R. which entered the consolidation. Locomotives built in the Hartford Shops, for some time after the consolidation still were named and it is not known definitely when names were removed from these engines.

90		New Haven Shops	7-30-1874	17x22″	69″	4-4-0	Re 1779	
							Sc 10-10-05	
91		New Haven Shops	1874	18x24″	62″	4-4-0	Re 1784	
							Sc 5-8-17	
92		New Haven Shops	6-14-1875	18x24″	62″	4-4-0	Re 1783	
							Sc 1-20-19	
93	Tiger	Hartford Shops	1875	12x22″	40″	0-4-0	Re 2915	
							Sc 12-1905	
94	Arcturus	Hartford Shops	1879	17x22″	63″	4-4-0		
	Rebuilt	Hartford Shops	1898	17x24″	69″	4-4-0	Re 1805	
							Sc 9-24-18	
95	Altair	Hartford Shops	1880	17x22″	63″	4-4-0		
	Rebuilt	Hartford Shops	1899	18x24″	69″	4-4-0	Re 1617	
							Sc 5-31-26	
96		New Haven Shops	4-12-1880	18x24″	62″	4-4-0	Re 1790	
							Sc 10-24-13	
97		New Haven Shops	9-16-1880	18x24″	66″	4-4-0	Re 1791	
							Sc 4-30-15	
98		New Haven Shops	4-13-1881	18x24″	66″	4-4-0	Re 1796	
							Sc 10-24-13	
99		New Haven Shops	9-17-1881	18x24″	54″	0-4-0	Re 2800	
							Sc 2-18-14	

100	Argus	Hartford Shops	1881	16x22″	48″	0-6-0	Re 2709 Sc 1-5-07
101		New Haven Shops	1882	18x24″	62″	4-4-0	Re 1788 Sc 4-2-07
102		Rhode Island	1882	18x24″	54″	0-6-0	
	Rebuilt	New Haven Shops	1897	18x24″	45″	0-6-0	Re 2539 Sc 6-1923
103	Venus	Hartford Shops	1882	18x22″	68″	4-4-0	
	Rebuilt	New Haven Shops	1898	18x24″	69″	4-4-0	Re 1620 Sc 5-31-25
104		New Haven Shops	1882	18x24″	62″	4-4-0	Re 1789 Sc 4-2-07
105	Adonis	Hartford Shops	1882	18x22″	68″	4-4-0	
	Rebuilt	New Haven Shops	1898	18x24″	69″	4-4-0	Re 1621 Sc 10-10-26

The renumbering of 1904 and the dates of scrapping are indicated at the extreme right. The abbreviations employed are as follows:

N H & N = New Haven & Northampton R. R. (Canal Road)
N H N L & S = New Haven, New London & Stonington R. R.
M W & C = Meriden, Waterbury & Connecticut River R. R.
N Y & N E = New York & New England R. R.
S L & N = Shepaug, Litchfield & Northern R. R.
C N E = Central New England R. R.

The engines of the Hartford & New Haven R. R. were built in their shops at Hartford, Connecticut. The term "Hartford Shops" is used after the consolidation to distinguish engines built in those shops from the other shops of the N. Y. N. H. & H. R. R.

This list will be continued in our next bulletin.

New York and New Haven Railroad Station

THIS beautiful edifice, an engraved representation of which will be found on another page, is situated in Union Street, and occupies the entire square from Chapel to Cherry Street,—being 300 feet in length. The style of architecture is Italian. The front of the building is toward the East, with a Tower at either end, each 25 feet square,—the one at the South end being 82 feet in height, while that at the North rises to an altitude of 140 feet above the pavement in Chapel Street, and 156 feet above the track of the rail road. In this latter Tower are the Engineer's room, and the office of the Company, as also other convenient and useful apartments. The main or center edifice is a parallelogram, 100 feet in depth, with a floor or platform 76 by 82 feet, suspended from the roof by numerous strong iron rods. This portion of the building is united to the North and South Towers, by connecting Wings 52 feet in width.

The grand entrance for passengers is from Union Street, by a spacious doorway into the center building. On either side of the main hall or platform, are extensive Parlors,—that on the left being for the accommodation of ladies, and is furnished with a profusion of rich and costly sofas, divans, chairs, ottomans, mirrors, &c., with convenient dressing rooms attached. Obliging servants are always in attendance. The Parlor on the right is for gentlemen's use, and is to be furnished as a Reading Room.

The Rail Road Track, which is 16 feet below the floor of the building, is reached by easy flights of stairs, on the right and left of the principal entrance, inside the building. The descent to the track of the New Haven and Northampton (or the Canal) Rail Road, is from the West side of the Platform, directly opposite the main entrance. The Ticket Office is on the left side of the grand hall, with ornamental windows of ground glass, one of which opens into the Ladies' Parlor.

Besides the Parlors, there are, in the connecting Wings and South Tower, several large and commodious rooms, to be occupied for various purposes connected with the business of the Company.

The height of the building, from the pavement in Union Street to the eaves, is 21 feet, with a spacious square dome in the center, rising to the height of 64 feet above the floor.

In the North Tower, at an elevation of 90 feet above the street, is a clock, with glazed face 8 feet in diameter, looking toward the four cardinal points. This clock is to be illuminated with gas, so that the hour of the night may be distinctly seen from all directions. Twenty feet above the clock, a large bell is suspended, the ringing of which indicates the arrival and departure of the trains of cars on the New York and New Haven, as well as the New Haven and Northampton, and the New Haven, Hartford and Springfield Rail Roads, all of which radiate from this central point. A watchman being stationed in the building at night, this bell is usually the first to sound its note of alarm in cases of fire.

NEW YORK AND NEW HAVEN RA

TO TAKE EFFECT ON AND AFTER MO

TIME WHEN TRAINS ARE TO LEAVE EACH TERMINUS OR WAY STATION, BY CLOCK IN

Special.		NEW HAVEN TO NEW YORK.								STATIONS.
2d.	1st.	Reg. Ft.	Ext. Ft.	6th.	5th.	4th.	3d.	2d.	1st.	
5.15P.M.	7.00A.M.	1.50A.M.	11.10A.M.	11.25P.M.	7.55P.M.	4.15P.M.	1.15P.M.	9.45A.M.	8.30A.M.	Ar. 75.98 N.Y., Canal St. Dep.
4.45 "	6.30 "	1.10 "	10.30 "	11.00 "	7.30 "	3.50 "	12.45 "	9.15 "	8.03 "	Dep. 73.68 32d St. 2.30 "
4.31 "	6.16 "	12.51 "	10.10 "	10.47 "	7.17 "	3.37 "	12.30 "	9.00 "	7.50 "	" 68.48 Harlem 7.50 "
4.17 "	6.00 "	12.30 "	9.50 "	10.32 "	7.01 "	3.23 "	12.13P.M.	8.43 "	7.33 "	" 62.48 Williams' Bridge 13.30 "
4.03 "	5.43 "	12.10A.M.	9.25 "	10.00 "	6.49 "	3.02 "	11.59A.M.	8.28 "	7.18 "	" 58.30 New Rochelle 19.68 "
3.53 "	5.34 "	11.50P.M.	9.10 "	10.12 "	6.43 "	3.06 "	11.50 "	8.20 "	7.10 "	" 52.66 Mamaroneck 23.32 "
3.39 "	5.24 "	11.34 "	8.45 "	10.03 "	6.30 "	2.58 "	11.40 "	8.10 "	7.00 "	" 49.01 Rye 26.97 "
3.35P.M.	5.20A.M.	11.22 "	8.34 "	10.00 "	6.25 "	2.55 "	11.37 "	8.06 "	6.56 "	" 47.37 Port Chester 28.61 "
		11.08 "	8.05 "	9.53 "	6.16 "	2.50 "	11.30 "	7.57 "	6.48 "	" 44.80 Greenwich 31.18 "
		10.45	7.46 "	9.43 "	5.57 "	2.40 "	11.18 "	7.46 "	6.35 "	" 39.50 Stamford 36.38 "
		10.20 "	7.16 "	9.30 "	5.40 "	2.26 "	11.05	7.34 "	6.20 "	" 34.97 Darien 41.01 "
NEW HAVEN		10.00 "	7.05 "	9.22 "	5.32 "	2.21 "	10.45 "	7.26 "	6.12 "	" 31.57 Norwalk 44.41 "
TO		9.40 "	6.50 "	9.13 "	5.25 "	2.13 "	10.35 "	7.18 "	6.03 "	" 28.61 Westport 47.34 "
BRIDGEPORT.		9.23 "	6.36 "	9.03 "	5.16 "	2.06 "	10.24 "	7.08 "	5.53 "	" 23.88 Southport 52.10 "
3d.	2d. 1st.	9.18 "	6.30 "	9.00 "	5.13 "	2.01 "	10.19 "	7.05 "	5.50 "	" 22.30 Fairfield 53.66 "
6.05PM	10.12AM	8.50 "	6.15A.M.	8.50 "	5.02 "	1.53 "	10.10 "	6.55 "	5.40A.M.	" 17.50 Bridgeport 58.46 "
5.51 "	10.03 "	8.10 "	.....	8.30 "	4.49 "	1.41 "	10.00 "	6.42 "	.....	" 14.03 Stratford 61.95 "
5.47 " 6.20P.M.	10.17 "	8.05 "	.....	8.26 "	4.46 "	1.36 "	9.56 "	6.39 "	.....	" 12.50 Housatonic Riv. 63.45 "
5.40 " 4.10 "	10.10	7.55 "	.....	8.20 "	4.40 "	1.33 "	9.49 "	6.33 "	.....	" 9.52 Milford 66.46 "
5.25 " 3.48 "	9.55 "	7.37 "	.....	8.15 "	4.23 "	1.20 "	9.35 "	6.20 "	.....	" 2.50 West Haven 73.68 "
5.20PM. 3.40PM.	9.50AM	7.30P.M.	.....	8.10P.M.	4.20P.M.	1.15P.M.	9.30A.M.	6.15A.M.	.....	Dep. New Haven 75.98 Ar.

The large full faced figures (1, 2, 3, &c.) on the Time Table, indicate the regular time and passing places for Trains.
The ordinary size figures (1, 2, 3, &c.) on the Time Table, indicate that the Train will stop at the Stations against which they are placed.
The small size figures (1, 2, 3, &c.) on the Time Table indicate that the Train will not stop at the Stations against which they are placed.
The letter t between Stations, indicates that Trains are passed on the double track.
Stations in italics are Signal Stations, and all Trains which are indicated by the proper figures in the Time Table will stop at such Stations when the signal is shown.
The 7.00 A. M. Train from New York will wait at Mamaroneck until 8.34, unless the 6.15 A. M. Train from New Haven arrives before. It will also wait at the east end of the double track near Housatonic River until 10.12, unless the 9.30 A. M. Train from New Haven arrives before. It will also wait at Milford until 10.20 A. M., unless the 9.50 A. M. Train from New Haven for Bridgeport arrives before. After waiting up these times at the several Stations, the 7.00 A. M. Train from New York will proceed, and the Trains to New York will keep out of its way. The 7.00 A. M. Train will not pass Milford until the 9.30 A. M. Train to New York arrives at that Station.
The 9.40 A. M. Train out of New York will wait at Williams' Bridge until 9.00 A. M., unless the 6.15 A. M. Train from New Haven arrives before, and will then proceed, and the Train into New York must keep out of its way.
The 9 A. M. Train from New York will wait at Darien until 11.15 A. M., unless the 9.30 A. M. Train from New Haven arrives before, and will then proceed, and the Train into New York will keep out of its way. The 9 A. M. Train from New York will keep out of the way of the 1.15 P. M. Express Train from New Haven.

☞ SEE THE BACK OF THIS TABLE.

The 11.15 A. M. [illegible] then proceed, and [illegible] the 4.30 P. M. Train [illegible]
The 3.00 P. M. Train [illegible] pest Train will keep [illegible]
The 4.00 P. M. Train [illegible] York will keep out [illegible]
The 8.10 P. M. Train [illegible] the 4 P. M. Train [illegible]
The Freight Train [illegible] Freight Train from [illegible] The Bridgeport and [illegible]

T. J. Stafford, Printer, New Haven.

The Regulations printed on the reverse of this time [illegible]

AVEN RAILROAD.—TIME TABLE.

N AND AFTER MONDAY, JUNE 2d, 1851.

STATION, BY CLOCK IN CONDUCTORS' OFFICE, CANAL STREET, NEW YORK STATION.

| STATIONS. | | NEW YORK TO NEW HAVEN. | | |

No. 7.

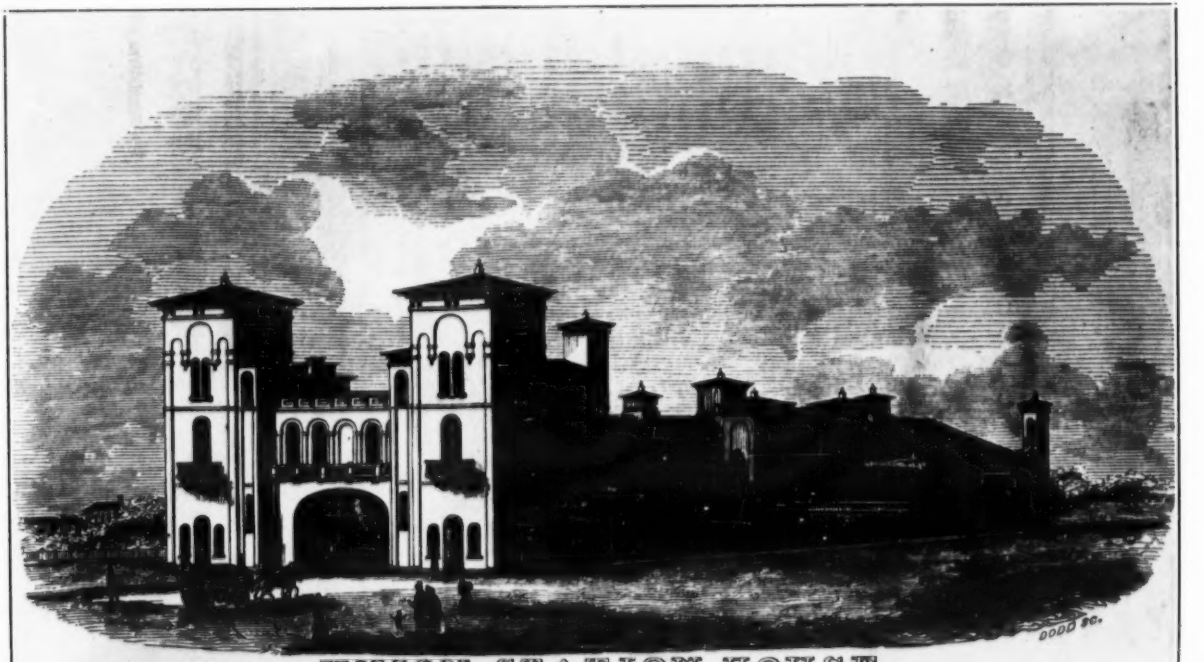
	Special.	
g. Ft.	1st.	2d.
50 P M	11.15 A M.	6.30 P M
35 "	11.45 "	6.55 "
52 "	11.59 "	7.10 "
10 "	12.15 P M	7.28 "
35 "	12.32 "	7.47 "
55 "	12.40 "	7.56 "
15 "	12.51 "	8.06 "
25 "	12.55 "	8.10 "
53 "		
.45		
05 "		
25 "		
37 "		
55 "		

BRIDGEPORT TO NEW HAVEN.

05 A M	1st.	2d.	3d.
40 "	6.30 AM	2.00 PM	
52 "	6.40 "	2.10 "	
00 "	6.45 "	2.14 "	4.30 PM
15 "	6.52 "	2.22 "	4.40 "
36 "	7.10 "	2.40 "	4.55 "
45 "	7.15 "	2.45 "	5.00 "

from New Haven arrives before, and will at Williams' Bridge until 7.45 P M. unless fore, and will then proceed, and the Bridge- d will then proceed, and the Train to New ft will not wait longer than 8.30 P. M. for rive before, and will then proceed, and this ngines, save Gravel. * See 10th Regulation.

STLER, Jr., Sup't.



UNION STATION HOUSE.

CORNER OF ASYLUM AND SPRUCE STREETS. See Description.

From the belfry of this lofty tower, lifted 140 feet above the neighboring streets, a most extensive and picturesque view of the city and surrounding country may be had. The spectator looks down on a forest of luxuriant elms, maples, &c., intermingled with which are the stately mansions, beautiful cottages, towering spires, and tasteful gardens of our silvan city.

The design of this beautiful structure, which reflects the highest credit on the architect, the builders, the Company, and the City, was furnished by Henry Austin, Esq., and the building was erected by Messrs. Bishop and Miller. Its cost to the Rail Road Company was upwards of $40,000. Long may it stand, as an enduring monument to the taste, the liberality and the enterprise of its projectors.

—Contributed by SIDNEY WITHINGTON.

(Taken from Benham's City Directory, and Annual Advertiser, 1849-50, Number 10.)

Railroad "Union Station House"

THIS building, represented on a preceding page, was erected during the past season, and is now approaching towards completion. It faces Asylum Street, at the bend of Mill river, with ample space in front for the convenience of carriages, and other purposes. It is 94 feet in width, and extends back 360 feet, and consequently covers four fifths of an acre. The style of Architecture is the Italian Campenili, and the general appearance is grand and imposing. The front corner towers are 23 feet square and 76 feet high; between which and the main entrance, are small towers 8 feet square and 24 feet in height. The central portion is 32 feet wide and elevated 42 feet, which includes the arch of 25 feet 5 inches span, and 20 feet in height. The main towers are to include the offices of the respective Railroad Companies. In the central parts of the building, are the Ticket Offices and Passenger Saloons, on the east side for the New Haven, Hartford and Springfield road, and on the west side for the Hartford, Providence and Fishkill. Over these are rooms for Refectories, 84 feet in length and 20 in width. The residue of the building, on each side of the double Railroad track, is occupied by two vast platforms for the reception of freight, baggage, &c.

—Contributed by SIDNEY WITHINGTON.

(Taken from Wells' City Directory 1850 Hartford.)

Regulations, No. 7

JUNE 2, 1851

1. No Train shall leave a Station before its time, as specified on the Time Table.

2. All Trains going into New York will keep out of the way of all Trains out of New York.

3. Trains to New York, after waiting one hour behind the regular time of Trains from New York, will have liberty to proceed until they meet a Train, keeping as much behind the regular time of the Train to New York at each Station, as they are required to be at the place of passing, and the Trains from New York must keep out of their way. If the first delayed Train is met before getting on the next Train's time, then the Train to New York will keep out of the way of the next Train until they get one hour behind, and so on.

4. Trains from New York will in no case pass Williams' Bridge before their time, unless Trains into New York that are due there before shall have passed.

5. Whenever a Train out of New York is delayed so as to be overtaken by the next Train following it, and the next Train passes the delayed Train, it must be governed by the same rules as to meeting Trains into New York as the delayed Train would be.

6. Whenever a delayed Passenger Train is passed upon the Road by a Passenger Train moving in the same direction, the Train so passed will be considered as an *irregular Train*, and must keep out of the way of all regular Passenger Trains, running in each direction, and each Train passing it in the same direction, will carry a red flag for the same.

No Freight Train has a right, by this rule, over the irregular Passenger Train.

7. Whenever any Passenger or Freight Train waits its time up at a place of passing and the expected Train does not arrive, it will keep as much behind its regular time at each Station as it is required to be at the passing place until the expected Train is passed.

8. Should it become necessary to give special instructions to Trains upon the Road, by which their movements are to be regulated, then the Conductor desiring to give such information, shall either go himself, or send some one, with written directions to all Trains whose movements are to be effected by the message sent; and no Conductor will be authorized to run out of time or place, without he has information in accordance with this regulation.

9. Freight and Extra Trains shall keep out of the way of all Regular Trains, never approaching a Station where Regular Trains are expected, unless they can arrive there, and place their Train on the side track, five minutes before the time such Trains are due.

10. Freight Trains, when followed by Passenger Trains, must always be on the turnout when the Passenger Train passes them, 10 minutes before the time the Passenger Train is to leave the Station.

11. Red lights on the rear of Freight Trains waiting on Turnouts for Passenger Trains to pass, must always be covered up.

12. Bridgeport and New Haven Train must keep out of the way of all Regular Trains.

13. The Clock in Conductors' office, Canal Street, New York, will be taken as the standard time for the running of Trains, and all Conductors are notified to compare their watches every time they are in the city with that Clock, and keep their Enginemen informed of the correct time. Conductors will also notice what difference in time there may be between the Clocks in New York and Bridgeport, and inform the Agent at Bridgeport of the same. The Clock at New Haven, in the Ticket Agent's office, will be kept as near the New York time as possible.

14. Trains arriving at a turnout where the meeting of another Train is expected, will in all cases enter upon the nearest end of the turnout, unless a Flag is sent ahead to stop the approaching Train.

15. Naugatuck Trains will in all cases come to a full stop at the Junction, before entering upon the New York and New Haven Railroad track, and see that their way is clear.

16. The New York and New Haven and Naugatuck Trains from the East will always come to a full stop at the west end of the double track near Bridgeport Draw, (giving ample room for Trains to pass on the main track,) providing Trains that are due there going East have not passed.

17. All Trains approaching a Station where they are to meet other Trains, will do so with great care.

18. Station Agents will in all cases be held responsible for the proper security and position of the switches.

19. Trains must run slow in coming on to and leaving the double track, and over large Bridges.

20. All Trains when on the Harlem Railroad, must be governed as to speed over Bridges, and through Harlem, by the regulations of the Harlem Railroad.

21. All Trains in coming into Bridgeport and New Haven, must run slow. Trains from New York must stop at Bridgeport in time to admit a Train passing the Housatonic main track.

22. All Engineers, on approaching a Station, shall sound the whistle, and pass the switches cautiously. Engineers will use every precaution at crossing by ringing the bell or sounding the whistle, from within 80 rods of every crossing, until it shall be passed.

23. Red Lanterns must be exhibited at night in the rear of all Trains, and in case a Train is delayed beyond its time between two Stations, the Conductor will use every precaution, and notify such Trains as are by the regulations due at the place of delay.

24. A Red Flag must always be exhibited upon an Engine when an Engine other than that of a Regular Train is to follow it, and in case a Regular Train is divided into two or more distinct Trains, Flags will be kept flying on all the Engines except the last. In the night time, Red Lanterns placed on the boiler behind the smoke pipe will be the signal, instead of Flags.

25. All persons at work upon the track are required to give notice of any obstruction caused by their work at a sufficient distance from the obstruction each way, and all Conductors, Engineers, &c, are particularly enjoined to proceed with extreme caution, when such notice is given, until the obstruction is passed.

26. Engineers will allow no person to ride upon the Engine without express authority.

27. The position of one Brakeman on each Train shall be on the rear car, and Conductors are to see that all the Brakemen are at their posts, and that the brakes are in good order, particularly that of the rear car.

28. All Conductors, Engineers, and Agents of the Company, must make themselves perfectly familiar with the Time Table, and the regulations for the Transportation department.

29. Conductors will ride on the rear car between Canal street and 27th street, in coming out of the city.

30. Strict observance of all regulations, and the greatest care and attention to their several duties, are enjoined upon all.

TRAINS ON THE HARLEM ROAD.—At Williams' Bridge, Fordham, and Mott Haven Stations, GREEN Lamps and Flags are used as signals to indicate that a Train has just passed in the same direction, and Enginemen will proceed with caution accordingly.

DIRECTIONS CONCERNING FLAGS AND SIGNALS, AND THE BELL CORD AND STEAM WHISTLE.

1. A Red Flag upon an Engine signifies that another Engine, of an irregular Train, is following; notwithstanding, the irregular Train must keep out of the way of all Regular Trains.

2. A White Flag exhibited on an Engine, indicates that another Engine is to follow, which must be treated, as regards the occupation of the track, in the same manner as the Engine bearing the Flag.

3. A Red Flag by day, or a Lantern by night, waved upon the track, signifies that a Train must come to a full stop.

4. A stationary Red Flag signifies that it is not in perfect order, and must be run over cautiously.

5. One stroke of the Bell signifies *go ahead*. Two strokes of the Bell signify *stop*. Three strokes of the Bell signify *back*.

6. Two puffs of the Steam Whistle are a signal to *brake*. One puff of the Steam Whistle is a signal to *loose the brakes*.

N. B.—The Engine man must be careful to ascertain that the stroke of the Bell is not occasioned by the uncoupling of a portion of the Train.

SPECIAL INSTRUCTIONS.

1. All Passenger Trains from New Haven, save the Bridgeport Special Train, will have a right to go into Bridgeport from the double track, when Trains are due from the opposite direction after sending a man over with a red flag—*provided* no Train is at Bridgeport ready to leave for the East.

2. If the Hartford Train which connects with the 9:30 A. M. Train from New Haven is not within hearing by 9.50, then the 9.30 Train will proceed.

3. The 1.15 P. M. Express Train from New Haven when delayed, will keep out of the way of the 3.35 P. M. Port Chester Special Train.

4. The 6.15 A. M. Train from New Haven will leave Bridgeport promptly at 7.00.

5. On Sunday, May 11th, and for each succeeding Sunday, the Extra Freight Train will run from Bridgeport to New York on the time of the Regular Freight Train, leaving Bridgeport at 8.50 P. M.

6. No Extra Freight Train will run from Bridgeport to New York on Monday, May 12th, nor on succeeding Mondays, until further notice.

7. The Extra Freight Train down on Sundays will return on its regular time on Mondays.

NEW HAVEN. GEO. W. WHISTLER, JR., *Sup't.*

Railroading in New York City

THE passenger trains (of the Hudson River Railroad) are made up in the lower part of the city, and the long cars, with their pivoting bogies at each end, are drawn by a dummy locomotive through the open streets, and are whisked round corners on curves of 60 ft. radius, the outer rail being formed as a flat plate on which the flanges, instead of the treads, of the wheels run round. The engine station is three or four miles up town, and when the train is fairly off for Albany it still has to cross a hundred or more of the streets of upper New York on a level. The New Haven and Harlem railroads, worked over one and the same line for a few miles, extend, the first to Albany and nearly parallel with the Hudson river, and the other to the eastern towns. Their trains are made up at Twenty-seventh Street, and they run across no end of Streets in the upper part of the city. There is nothing in New York which comes up to an Englishman's idea of a railway station, and most of the railway arrangements are indeed quite *al fresco*. The lines already mentioned and those on Long Island are of the 4 ft. 8½ in. gauge.

"A Trip to America.—No. II."
"Engineering", London, June 1, 1866, P. 356.

—Contributed by H. G. BOUTELL.

R. & L. H. S. Negatives

In addition to the negatives listed in our Room Catalogue, the Society has acquired the following negatives:

SIZE 3¼x4¼

A-66 Delaware & Hudson #79 "Albany" 2-6-0 Dickson 1875

SIZE 3½x3¾

B-1 Boston & Albany Station, Beach Street, Boston

SIZE 3¼x5½

E-186	Missouri Pacific	#2353 4-6-0	Brooks	1901
E-187	"	#4000 2-8-8-2	Baldwin	1912
E-188	"	#1528 2-8-2	A. L. Co.	1924
E-189	"	#9782 0-8-0	Baldwin	1925
E-190	Chicago & North-western	# 468 4-6-0 R-1	Schenectady	1905
E-191	Illinois Central	#2941 2-10-2	Lima	1920
E-192	"	#3544 0-8-0	Baldwin	1927
E-193	"	# 760 2-8-0	Rogers	1904
E-194	"	#1190 4-6-2	Schenectady	1920
E-195	Alton R. R.	#2090 2-8-0 E-49	Brooks	1909
E-196	"	#5280 4-6-2 P-15	Brooks	1910
E-197	"	#4378 2-8-2 Q-6	Baldwin	1913
E-198	"	#4356 2-8-2 Q-5a	Brooks	1910
E-199	T. R. R. of St. Louis	# 80 0-6-0	Baldwin	1903
E-200	"	# 99 0-6-0	Manchester	1904
E-202	"	# 250 0-6-0	Richmond	1918
E-203	"	# 63 0-6-0	Baldwin	1902
E-204	"	# 159 0-6-0	Pittsburgh	1919
E-206	Wabash R. R.	#2459 2-8-2 K-1	Pittsburgh	1913
E-207	"	# 663 4-6-2 J-1	Richmond	1912
E-208	"	# 683 4-6-2 J-2	Baldwin	1906

Negatives F-2, F-7 and H-20 are withdrawn as it is impossible to make satisfactory prints.

Negative F-1 is the "Wilton" of the Danbury & Norwalk R. R.

Negatives F-13 and F-14 should be listed as 0-6-0 and 0-4-0 respectively and F-32 is Wiecpee Jct., not Whoppee Jct.

Prices of the 3¼x4¼ and 3¼x5½ are 10c each, smaller sizes 8c each. All orders, accompanied with money should be addressed to Harold S. Walker, P. O. Box #65, Beach Bluff, Mass.

Worth Reading

(Compiled by ELIZABETH O. CULLEN, *Reference Librarian*, Bureau of Railway Economics, Washington, D. C.)

BOOKS AND PAMPHLETS

Adventure, by Col. A. E. Davidson. 18 pp. London, England, The Institution of Mechanical Engineers. Presidential address to the Institution, October 25, 1935. " . . . There is first adventure in the purely geographical sense . . . What I had in mind, however, was the call to supply the simple needs of man in distant and inaccessible countries. These may be grouped under the following heads: water, light, cheap transport, the preservation of food . . . " p. 2.

Famous American Trains and Their Stories, by Roger Reynolds. 94 pp. Illustrations, partly in color, end-paper maps. New York, Grosset and Dunlap. Trains described are Empire State Express, Broadway Limited, Aristocrat, Capitol Limited, Chief, Congressional Limited, Dominion, Empire Builder, Cascade, Erie Limited, Flying Yankee, George Washington, Golden State Limited, North Coast Limited, Orange Blossom Special, Olympian, Pan-American, Overland Limited, Texas Special, Rocky Mountain Limited, 20th Century Limited, Sunshine Special, Pocahontas, Yankee Clipper, Sunset Limited, Streamline (M-10001), and Zephyr.

The First Twenty Years of Railroads in Connecticut, by Sidney Withington. 32 pp. No. XLV of historical publications of Tercentenary Commission of Connecticut.

Hundert Jahre Deutsche Eisenbahnen. 543 pp. Illustrations, partly in color, map. Berlin, Deutschen Reichsbahn. Jubilee publication of the German Railroad Company in connection with celebrations of century of railroading in Germany.

The Milwaukee Road 1847-1935—*Brief Record of the Development . . . from the Chartering of Its First Predecessor Company in* 1847 *to Date—July* 1935, by F. H. Johnson. Cover-title, 60 pp., illustrations, maps. Chicago, Ill., The Milwaukee Road.

Pioneer Pathways to the Pacific, by William Lee Park. 284 pp., illustrations. Clare, Michigan, Clara Aire. From the French Voyageurs to the reconstruction of the Union Pacific by E. H. Harriman. "For many years (1875 to 1920) the writer was in continuous personal contact with the western railroads . . . The most important events, as well as the minor happenings, made a deep impression, strong enough to impel him to record them with exactness, it is hoped, and with interest to the student and reader . . . " Preface, pp. v-vi. Among the persons in the picture opposite page 271 is Joe La Fors, the "Whispering Smith" of F. H. Spearman's novel of that title.

A Review of Railway Operations in 1935, by Dr. Julius H. Parmelee. 32 pp. Washington, D. C., Bureau of Railway Economics of the Association of American Railroads. Special series bulletin no. 64.

The Revolution in Transportation, by Charles Barham. 29 pp. "This treatise was prepared for the Round Table of Nashville, Tenn., and presented at its meeting on December 14, 1935." Note, p. 3.

Trains, Tracks and Travel—4th Edition, February 1936, by T. W. Van Metre. 296 pp. New York and Chicago, Simmons-Boardman Publishing Co. Illustrations. " . . . And now 'Tomorrow's Trains' are here, the first one a little more than a year old, several others in operation, and many now being built. They are now 'Today's Trains.' And nobody knows what the trains of toworrow will be . . ." p. 186.

Universal Directory of Railway Officials and Railway Year Book 1935-1936, compiled from official sources under the direction of the Editor of The Railway Gazette, London. 582 pp. London, England, The Directory Publishing Co., Ltd. Includes historical sketches of individual railway systems in various parts of the world.

PERIODICAL ARTICLES

Advance Through Adversity—An Explanation of Trends in Railway Equipment Design Which Have Developed Through Modern Demands, by L. K. Silleox. Engineering Journal, Canada, March 1936, pp. 125-141.

American Trains Hold World Speed Records. Maximum of 127.2 *m.p.h. Made by a Pennsylvania Train in* 1905 *Still Stands Unbeaten.* Table "The World's Fastest Runs" pp. 583-585. Railway Age, April 4, 1936, pp. 583-586.

The Centenaries of 1936. Editorial comment on railroad centennials in the U. S. and Gt. Brit. Railway Gazette, January 3, 1936, pp. 4-5.

Narrow-Gauge Main Line Railways, by P. Kandaouroff. Historical reviews of systems. Table I—"The Most Important Narrow-Gauge Railway Systems in the World," p. 412. Bulletin of the International Railway Congress Association, English edition, April 1936, pp. 411-442.

100 *Years, German Railways.* Illustrations, partly in color. Illustrirte Zeitung, Leipsig, Germany, Special Issue in English.

1,048 *Miles A Day.* The Union Pacific's "City of Denver." "It will also, we imagine be the first example in railway history of a train of any description running over a thousand miles daily throughout the week as a regular procedure . . ." Railway Gazette, London, March 6, 1936, p. 431.

Railroad Research Problems, by L. W. Wallace, director of equipment research, Association of American Railroads. Railway Club of Pittsburgh, Official Proceedings, February 27, 1936, pp. 88-111.

Railroading Fiction, by May Lamberton Becker. The editor of The Reader's Guide comments on English and American railroad fiction. New York Herald Tribune Books, April 19, 1936, p. 20.

The San Francisco-Oakland Bay Bridge, by C. H. Purcell. Illustrated. Mechanical Engineering, January 1936, pp. 7-21.

Second Special Overseas Railway Number. Map, pp. 8-9, "Situation and Route Mileage of Typical Overseas Railways Referred to or Illustrated in this Issue." Illustrations. Railway Gazette, London, Special Issue dated November 27, 1935.